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of an industrial hygiene survey. 1938.

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A REFERENCE MANUAL
FOR THE
ADMINISTRATOR
OF AN
INDUSTRIAL HYGIENE SURVEY

Prepared by
The Division of Industrial Hygiene,
National Institute of Health,
U. S. Public Health Service. Div. of Industrial Hygiene.

1938

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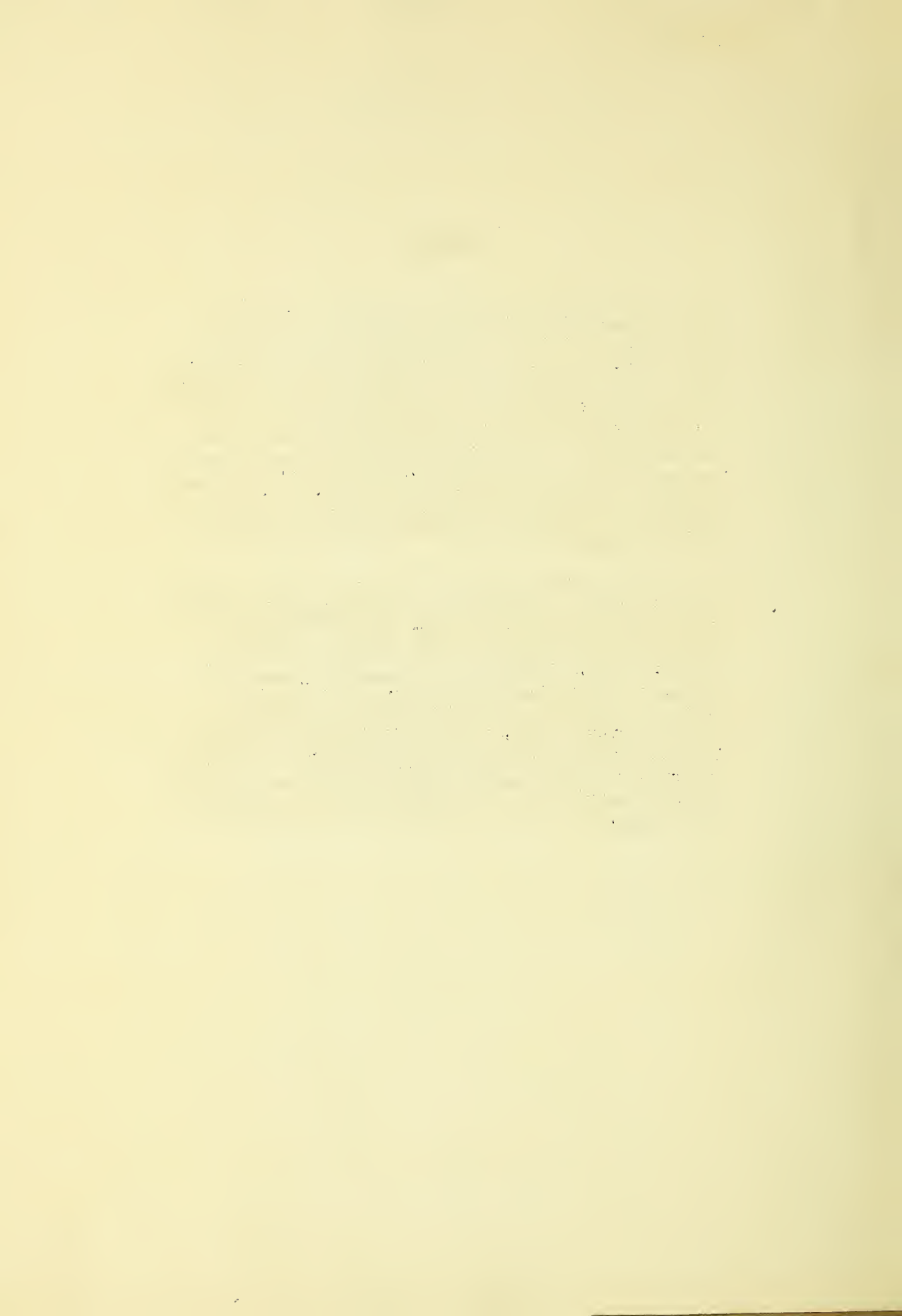
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PREFACE

This manual is intended to be of assistance to the Health Officer responsible for making a preliminary survey of industrial health conditions in a State, county, city or large industrial group. It is not presented as a finished manual of instructions, but rather as a guide and reference for a person already familiar with the purposes and desired results of industrial hygiene surveys. Before attempting to use this manual, one should familiarize himself with Public Health Bulletin No. 236, and the published reports of industrial hygiene surveys in various States.

This manual consists of first, a brief summary of hints and suggestions for inaugurating an industrial hygiene survey; second, a list of desired office and field supplies for carrying out the survey; third, examples of industrial classifications, survey manuals and forms, and fourth, a list of suggestions for organizing the operations in the survey office, and other material necessary in making an industrial hygiene survey. The survey supervisor should become familiar with the material in this manual and its location before inaugurating the survey.



- A. Obtain a list of all industries and service establishments in the area to be surveyed (see paragraph "C"). Group these establishments on the basis of the classification used by the United States Census Bureau (see page 61, Public Health Bulletin No. 236, June 1937. Classification included in this manual as "Classification of Industries"). This code is now being used as the basis for all United States industrial surveys.

As an aid in classification, refer to the alphabetical list of industries in the 15th Census of the United States (page 33, Industry Index). A copy of this more detailed break-down of the industrial classification, with suggested corrections, has been included under the heading "Industry Index".

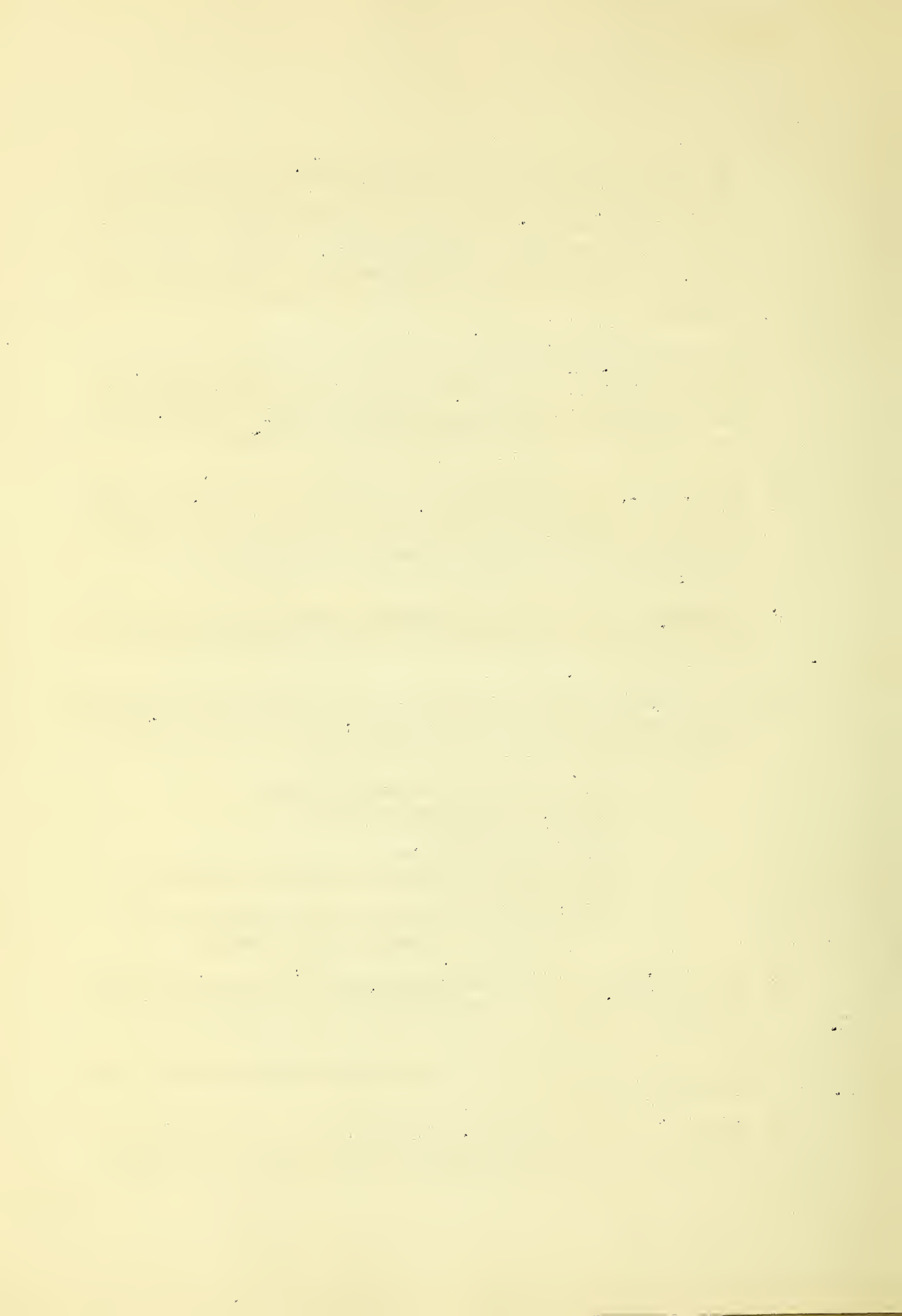
- B. Next decide what industries it is desirable to survey. Duplication of studies already done by the Labor Department, Bureau of Mines, etc., should be avoided. Industrial groups which may safely be omitted from the survey are marked with an asterisk (*) in the "Classification of Industries".

IMPORTANT: Be sure that industrial grouping is representative and all industries selected for survey are proportionately represented.

- C. Obtain name of plant, working population and product manufactured so that each plant may be placed in the proper survey group. Possible sources for this information are:

Unemployment Compensation Office
Workmen's Compensation Board
Licensing Boards
Manufacturing indices
Local board of trade or chamber of commerce
City directories
Telephone directories (as last resort or for purposes of checking other sources)

- D. Make an index card for each plant, showing name, address, working population, product manufactured and, if possible, name of official in charge.
- E. Code cards according to the chief product manufactured in the represented plant.
- F. Prepare an alphabetical list of all plants in the survey area to be used as a reference directory. This should be done before



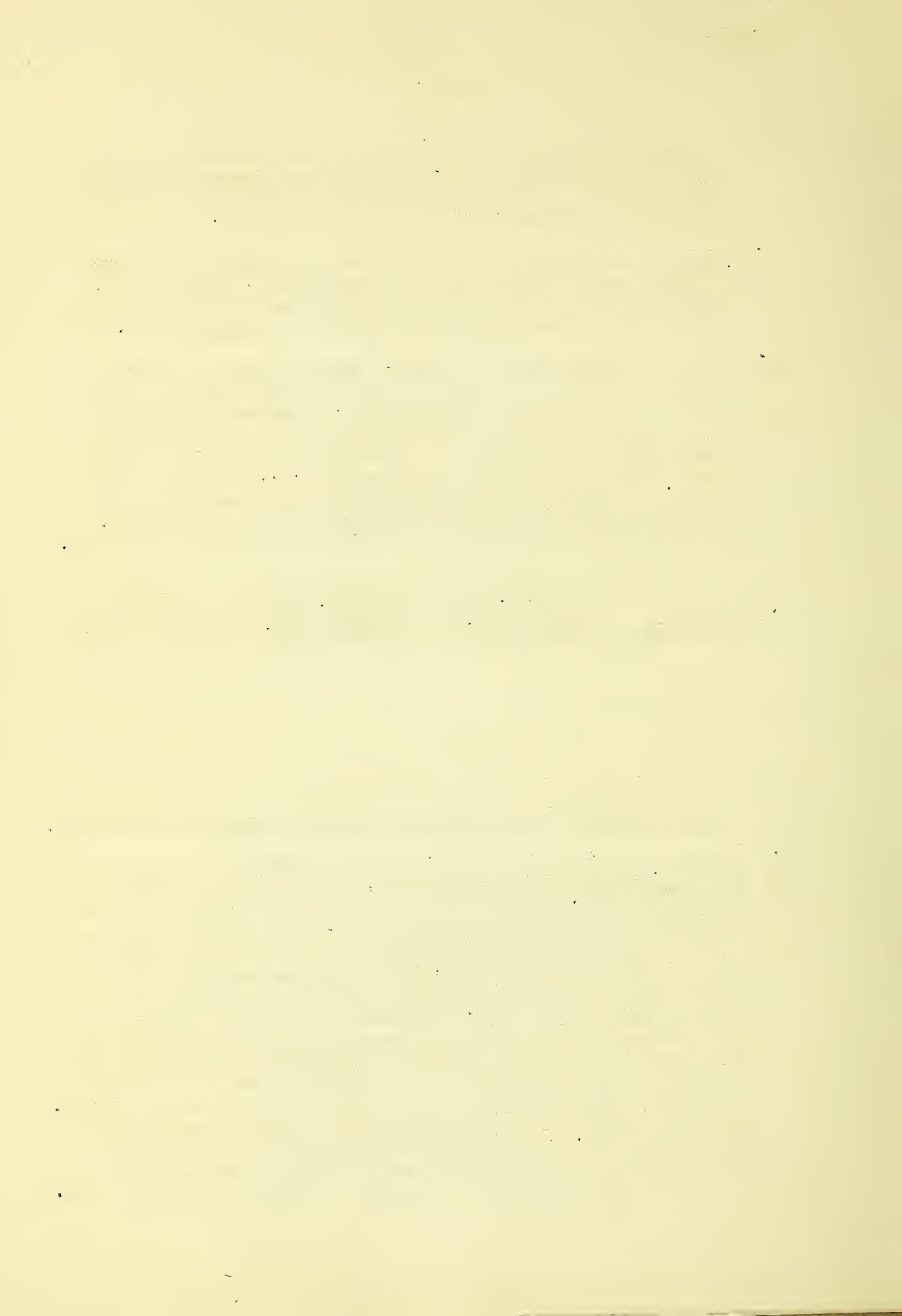
the sample is selected and will necessitate throwing the index cards in alphabetical order. This work may appear unnecessary but will serve to eliminate duplicate cards and the resulting list will be invaluable as the survey progresses.

- G. Decide on minimum plant population to be surveyed and separate all plant cards showing less than this number. For example, if a minimum of 5 is selected, the cards for all plants employing 4 or less workers should be placed in a separate file.
- H. All plant cards should be sorted. Those selected for survey should be filed in one group and those discarded due to small number of employees in a second group. Sort cards according to code number (based on industrial classification of product manufactured) and determine the total number of plants and the total working population in each group, i.e., under each code number. Tabulate plants according to industry and population for later comparison with Census figures in the same groups. The following is an example of a tabular form which can be used.

	(1)		(2)		(3)	
	Under Min. Limit	Plants Pop.	Over Min. Limit	Plants Pop.	Plants	Census Pop.
Industry						

This tabulation will enable one to detect omissions in the lists.

- I. Compare populations and number of plants falling below and above the lower limit figure decided upon, and do this for each industrial group. This is done to determine whether or not the lower limit has been correctly selected. If a large percentage of the total working population are employed in plants which fall below the selected limit, a representative sample of the smaller plants should be surveyed so that the working population will be reasonably covered. Determine the size of the sample to be surveyed after taking into consideration the time, funds and personnel available to make the survey, the homogeneity of each industrial group and the similarity between the prepared industrial index and the Census data covering the same industries. It may be advisable to vary the percent of plants surveyed in different groups. A survey of 50 to 100% of the plants is desirable in a diversified or small industrial group, while a 25 or 33 1/3% sample may be adequate in a large homogeneous group.



Large samples are frequently desirable in industries where processing methods vary between different plants.

- J. Select the sample by drawing every 2nd, 3rd, or 4th, etc., card from the index file for each industry. Check sample by totaling plants and population in the sample groups, and compare these figures with the total number of plants and population in each group, to be sure that you have taken as large a percentage as you desired. The sample should always be larger than the desired percentage, since a complete survey of all selected plants is seldom possible, and some surveys will have to be omitted or discarded.
- K. Divide the index cards representing plants selected for survey according to geographical location, since this will facilitate the surveying procedure. The index cards which were not selected in the survey sample should be filed according to industrial classification.

NOTE: As stated later, the index card for each plant should be attached to the survey when it is received at the office, and will follow it through the tabulating procedure. After the survey has been coded and tabulated, this index card representing a complete survey will be filed according to industrial classification.

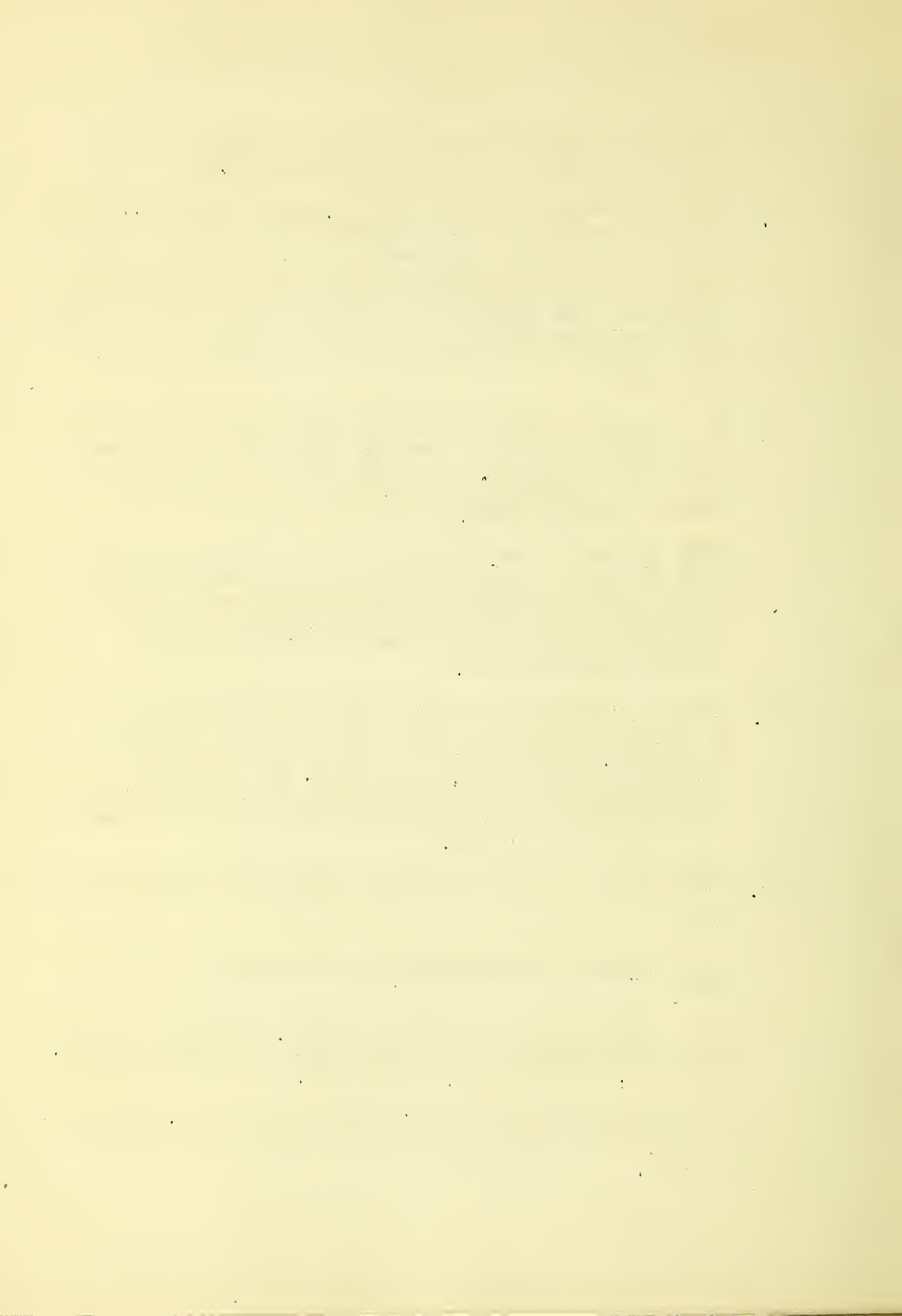
- L. Make up a form letter to be sent as an individual letter to each plant manager a week or ten days before the plant is to be surveyed, to permit a reply from the plant manager and additional correspondence, if necessary. (An example of a typical introductory letter is included later. Modifications of this letter to fit individual conditions will be necessary in the case of each survey.)
- M. Preparation of forms for collecting survey data (examples included).

Forms

1 and 2 -- Both of these forms can be mimeographed on one 3 x 5 card.

Form 1 should show name of plant, product, and working population. Form 2 shows additional data required from the plants surveyed. Reference: Forms 1 and 2, Bulletin 236.

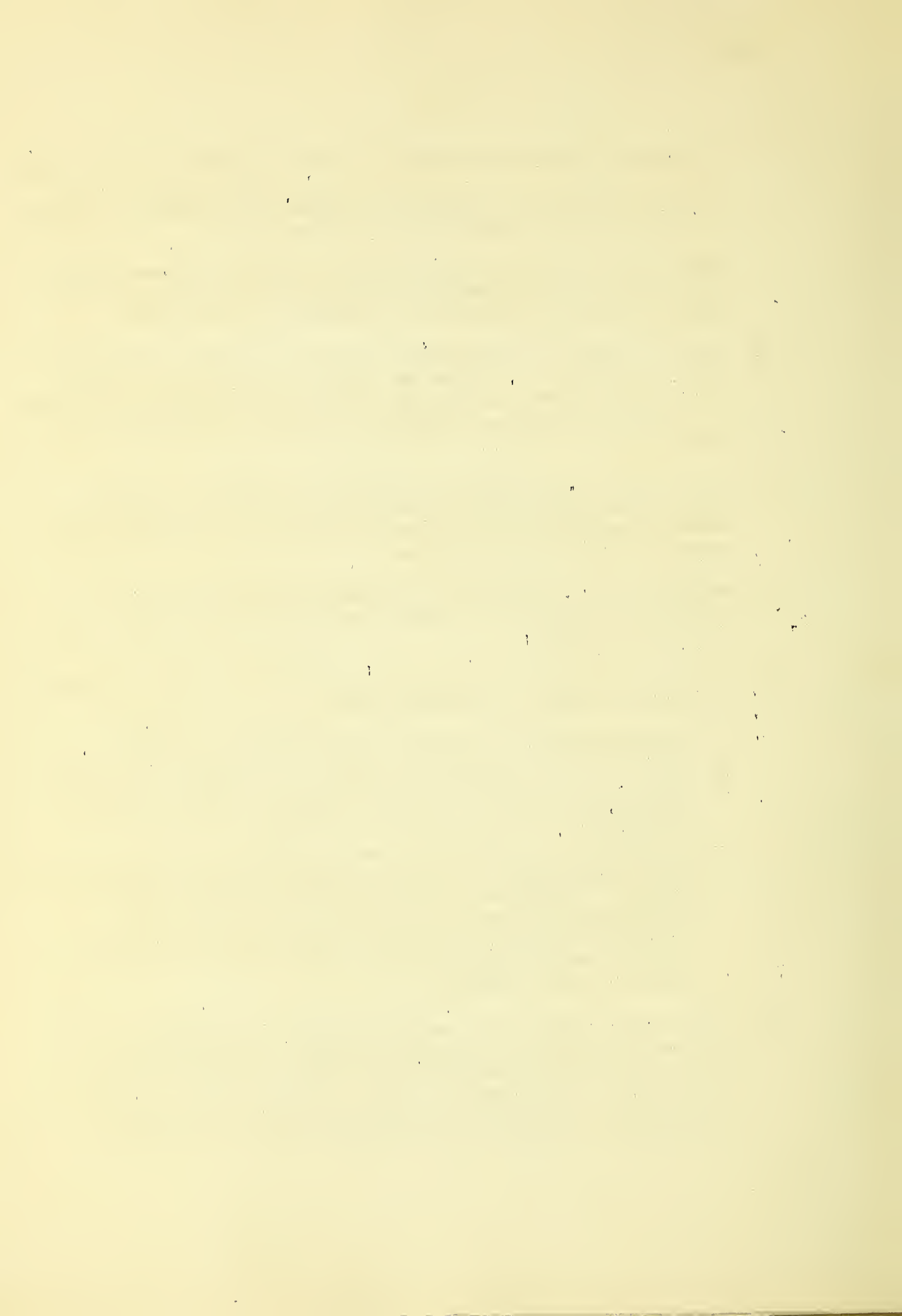
3 -- Industrial health services for plant as a whole. Reference: Form 3, Bulletin 236, and including samples of selected State surveys.



4 - Workroom survey data similar to Form 4 included in this manual.
5 to 9, inclusive - are tabulation forms. Representative examples of these forms are included in this manual.

NOTE: Form 10 is a tabulation form for venereal disease information as used in the Colorado industrial hygiene survey, and is adaptable if such information is collected in the survey.

- N. Prepare a manual of instructions for the people who will actually make the surveys of the plants. This will explain the entries to be made on Forms 3 and 4, and will outline a suggested procedure for making the surveys. (Example of survey form included in this manual.)
- O. Before making any surveys, assemble the surveyors and explain the procedure for making the surveys, discussing the manual in detailed lectures. It will also be desirable to supervise each surveyor on his initial surveys.
- P. Assemble a good library for the editor. The list given in Appendix C of Bulletin 236 should serve as a minimum requirement for such a library.
- Q. Selection of Personnel: The requirements for the personnel making the survey in order of importance are:
1. Surveyors should be intelligent, observing and tactful.
 2. They should be familiar with industrial plants and processes.
 3. They should have had experience in public health work and should know the policies of the department responsible for the survey.
 4. If possible, they should be trained chemical or public health engineers. It will be desirable for the person in charge of the survey not only to give a thorough course of instruction prior to the survey, but also to issue periodic instructions during the survey as the need for such instruction becomes evident while editing the surveyors' reports (forms 3 and 4).
- R. When a plant selected for survey is found to be closed, or when for reasons beyond the surveyor's control a survey cannot be made, another plant should be drawn from the original list and substituted for the inactive plant. It may also be desirable to substitute a similar plant for an isolated plant in an outlying district, since this preliminary survey is primarily a



fact-finding procedure concerned with the type and number of industries, the industrial population and the material exposures which will be encountered by this population. Substitution will, of course, be impossible where a survey of 100% of the plants in any one group is desired, or where measurements are being made to determine the existence of actual exposures, controlled or otherwise, but substitution is permissible where the survey is intended merely to determine the possible existence of a health hazard in an industry group.

- S. Emphasize to surveyors that they should make a flow-sheet for each sizeable plant, showing the progress from raw material through the various processes to the finished product, and that they should, if possible, make the survey of workrooms following the flow-sheet order.
- T. A survey supervisor should make a list of plants assigned to each surveyor and keep a daily record of the surveys returned by each surveyor. A daily record of reports tabulated can also be incorporated on this same form. An example of the office record form used in some States is given below.

Date	Plants allotted	Plants Surveyed	Plants Tabulated	Plants closed or too small to survey
------	-----------------	-----------------	------------------	--------------------------------------

- U. **Publicity:** A policy with regard to publicity should be adopted with the approval of the State Health Commissioner. All matters, such as radio talks, newspaper releases and general information to the public through departmental news letters, etc., should be determined at this time. It has been the experience in most States that a minimum of publicity is desirable, but local conditions must be considered in every case.



Materials and Supplies Needed for a State Wide Industrial Hygiene Survey.
(Figures refer to supplies needed for a 30% survey of 1000 establishments and should be proportionately increased for larger surveys.)

OFFICE AND FIELD SUPPLIES.

- 1500 plain white file cards (3" x 5" suggested)
 200 index cards, 1/3 cut (3" x 5")
 file boxes for above cards
 4 doz. pencils, 2H (2 doz. for surveyors)
 1/2 doz. red pencils
 1/2 doz. blue pencils
 1000 paper clips
 300 file folders (letter size)
 100 Manila envelopes, large size (if needed)
 2 doz. Mimeograph stencils (for forms and manual)
 500 Letterheads (for introductory letters)
 500 Official envelopes
 500 Stamps (2¢ and 3¢ as necessary)
 200 Carbon paper sheets (Same size as survey forms)
 24 Pads scratch paper
 Stenographers notebooks, wastebaskets, inkwells, lamps, bond
 and copy paper, erasers, rubber bands, etc.
 Clip boards (one per surveyor)

Mimeographed or printed forms as follows:

2000 - form 3	1500 - form 7	100 - form A
7500 - form 4	500 - form 8 (if used)	100 - form B
500 - form 5	1500 - form 9	100 - form C
500 - form 6	500 - form 9a (if used)	100 - form D

Minimum Office Equipment:

Typewriter Desk (Stenographer's Desk)

Large office desk

Large Table

Chairs for office personnel

Typewriter

Adding machine (Electrical preferred)

Calculating machine (Munroe or equivalent)

File cabinet, letter size, four drawer unit.

Stapling machine (paper fastener)

CLASSIFICATION OF INDUSTRIES

AGRICULTURE, FISHING & FORESTRY

Symbol

- * VV Agriculture
- * VO Fishing
- * VI Forestry

EXTRACTION OF MINERALS

- V2 Coal mines
- V3 Copper mines
- V4 Gold & silver mines
- V5 Iron mines
- V6 Lead and zinc mines
- V7 Other specified mines
- V8 Not specified mines
- V9 Quarries
- XV Oil wells & gas wells
- XO Salt wells & works

MANUFACTURING & MECHANICAL INDUSTRIES

- * XI Building and construction industry

CHEMICAL AND ALLIED INDUSTRIES

- X2 Charcoal & coke works
- X3 Explosives, ammunition, and fireworks factories
- X4 Fertilizer factories
- X5 Gas works
- X6 Paint & varnish factories
- X7 Petroleum refineries
- X8 Rayon factories
- X9 Soap factories
- OV Other chemical factories
- OO Cigar and tobacco factories

CLAY, GLASS AND STONE INDUSTRIES

- 01 Brick, tile, and terra-cotta factories
- 02 Glass factories
- 03 Lime, cement and artificial stone factories
- 04 Marble & stone yards
- 05 Potteries
- 2V Other Clay, Glass & Stone

* Not needed

CLOTHING INDUSTRIES

- 06 Corset factories
- 07 Glove factories
- 08 Hat factories, felt
- 09 Shirt, collar & cuff factories
- IV Suit, coat & overall factories
- 10 Other clothing factories

FOOD AND ALLIED INDUSTRIES

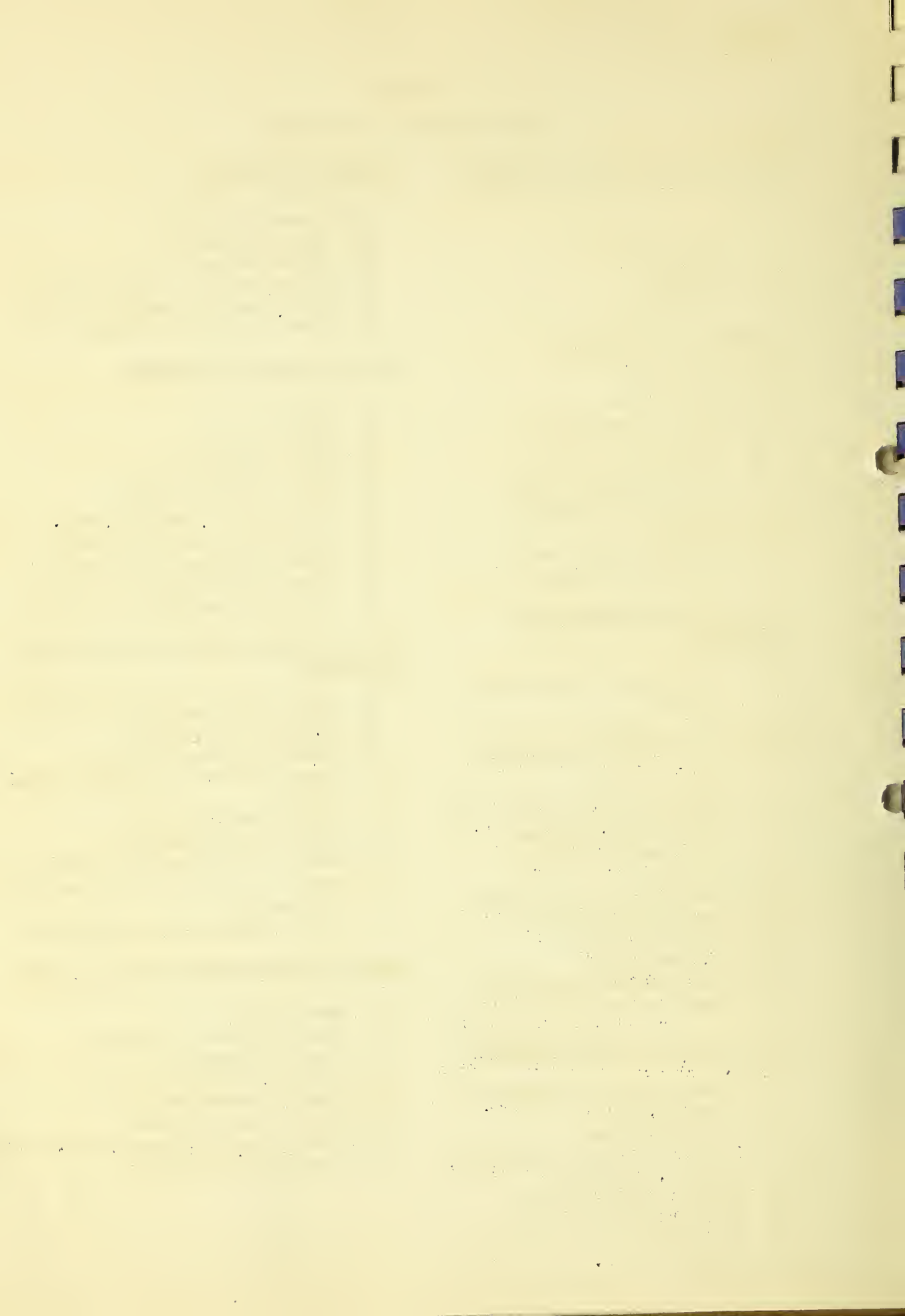
- 11 Bakeries
- 12 Dairy products
- 13 Candy factories
- 14 Fish curing & packing
- 15 Flour and grain mills
- 16 Fruit & Veg. canning, etc.
- 17 Slaughter & packing houses
- 18 Sugar factories & refineries
- 19 Other food factories
- 20 Liquor and beverage industries

IRON AND STEEL, MACHINERY AND VEHICLE INDUSTRIES

- 21 Agricultural implement factories
- 22 Automobile factories
- 23 Automobile repair shops
- 24 Blast furnaces and steel rolling mills
- 25 Car and railroad shops
- 26 Ship & boat building
- 27 Wagon and carriage factories
- 28 Other iron and steel and machinery factories
- 29 Not specified metal industries

METAL INDUSTRIES EXCEPT IRON AND STEEL

- 3V Brass Mills
- 30 Clock and watch factories
- 31 Copper factories
- 32 Gold and silver factories
- 33 Jewelry factories
- 34 Lead & zinc factories
- 35 Tinware, enamelware, etc. factories
- 36 Other metal factories



LEATHER INDUSTRIES

- 37 Harness & saddle factories
- 38 Leather belt, leather goods,
etc. factories
- 39 Shoe factories
- 40 Tanneries
- 41 Trunk, suitcase, and bag
factories

LUMBER AND FURNITURE INDUSTRIES

- 42 Furniture factories
- 43 Piano and organ factories
- 44 Saw and planing mills
- 45 Other woodworking factories

PAPER, PRINTING AND ALLIED
INDUSTRIES

- 46 Blank book, envelope, tag,
paper bag, etc. factories
- 47 Paper and pulp mills
- 48 Paper box factories
- 49 Printing, publishing and
engraving

TEXTILE INDUSTRIES

- 5V Cotton mills
- 50 Knitting mills
- 51 Silk mills
- 52 Textile dyeing, finishing,
and printing mills
- 53 Woolen & worsted mills

OTHER TEXTILE MILLS

- 54 Carpet mills
- 55 Hemp, jute & linen mills
- 56 Lace & embroidery mills
- 57 Rope and cordage factories
- 58 Sail, awning, and tent
factories
- 59 Other and not specified
textile mills

MISCELLANEOUS MANUFACTURING INDUSTRIES

- 60 Broom & brush factories
- 61 Button factories
- 62 Electric light & power plants
- 63 Electrical machinery and supply
factories
- 64 Independent hand trades
- 65 Rubber factories
- 66 Straw factories
- 67 Turpentine farms & distilleries
- 68 Other miscellaneous industries
- 69 Other not specified industries

TRANSPORTATION AND COMMUNICATION

- * 70 Air transportation
- * 71 Construction and maintenance of
streets, roads, sewers, bridges
- * 72 Express companies
- 73 Garages, automobile laundries
greasing stations
- * 74 Livery stables
- * 75 Pipe lines
- * 76 Postal service
- * 6V Radio broadcasting and transmitting
- 77 Steam railroads
- 78 Street railroads
- * 79 Telegraph and telephone
- * 8V Truck, transfer & cab companies
- * 80 Water transportation
- * 81 Other and not specified transporta-
tion and communication

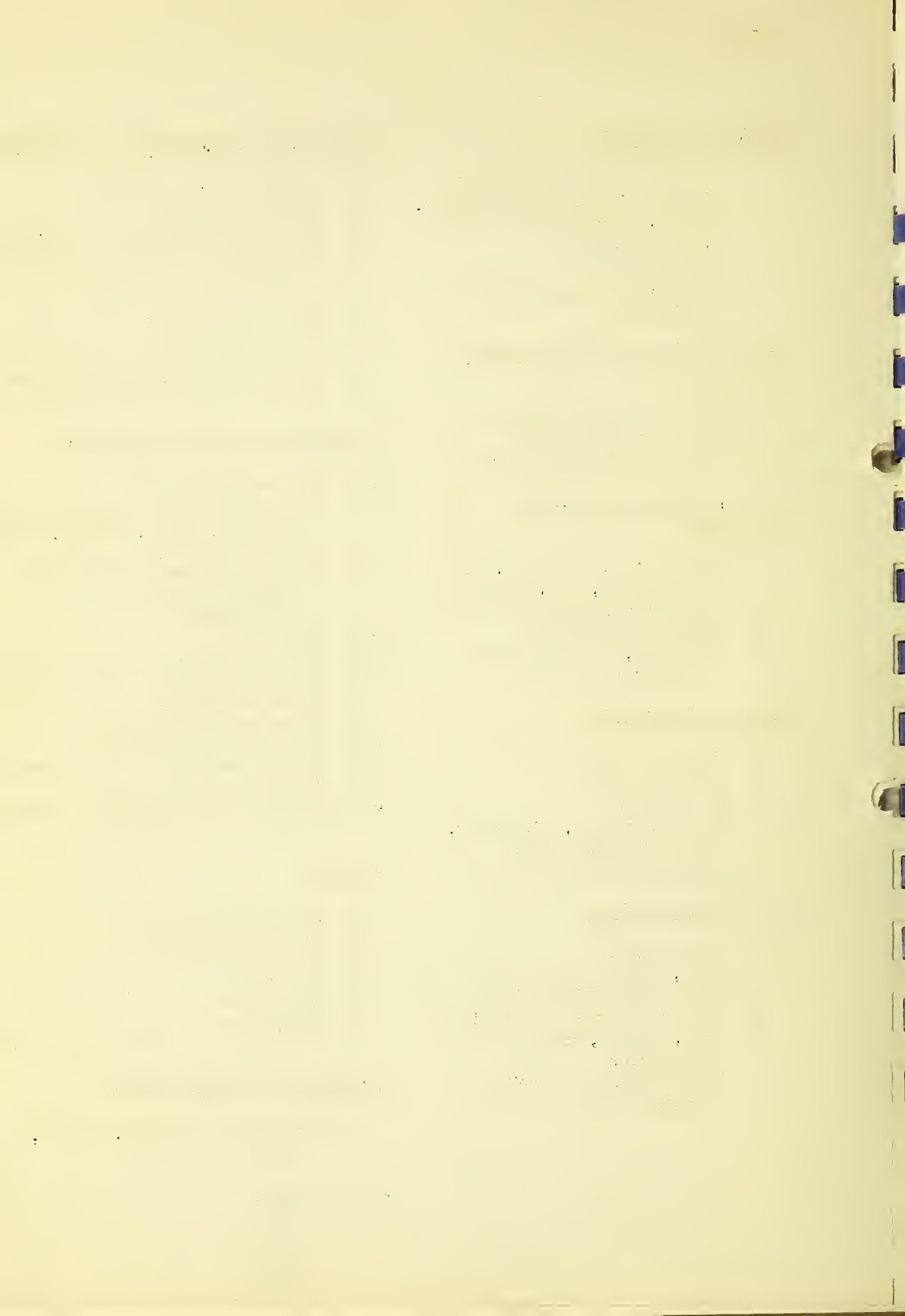
* TRADE

- 82 Advertising agencies
- 83 Banking and brokerage
- 84 Grain elevators
- 85 Insurance
- 86 Real Estate
- 87 Stockyards
- 88 Warehouses, & cold storage plants

WHOLESALE AND RETAIL TRADE

- 89 Automobile agencies, stores,
filling stations

* Not needed.



WHOLESALE AND RETAIL TRADE

(Except Automobile)

- 90 Wholesale and retail trade
(except dealers and except
laborers in coal and lumber
yards.)
- 91 Wholesale and retail dealers
and laborers in coal and
lumber yards
- 92 Other and not specified trade

PUBLIC SERVICE

(Not elsewhere classified)

- * 7V Recreation and amusement
- * 94 Professional pursuits
- * 95 Semi-professional pursuits
and attendants and helpers
- * 9V Hotels, restaurants, boarding
houses, etc.
- * 96 Domestic and personal service
(not elsewhere classified)
- 97 Laundries
- 98 Cleaning, dyeing and pressing
shops

NOT SPECIFIED INDUSTRIES AND SERVICES

- 99 Not specified industries and
services

* Not needed



TALLEY SHEET

INDUSTRIES IN INDIANA - CLASSIFIEDEXTRACTION OF MINERALS

- V2 Coal Mines
- V8A Sand and Gravel
- V8B Limestone
- XV Oil and gas wells

MANUFACTURING AND MECHANICAL INDUSTRIES

Chemical and Allied Industries:

- X2 Charcoal & Coke Works
- X3 Explosives, Ammunition & Fireworks Factories
- X4 Fertilizer factories
- X5 Gas Works
- X6 Paint & Varnish Factories
- X7 Petroleum Refineries
- X8 Rayon Factories
- X9 Soap Factories
- OV Other Chemicals
- OVA Baking Powder
- OVB Blacking, stains, etc.
- OVC Carbon Paper, Ink
- OVD Chemicals
- OVE Compressed Gases
- OVG Drugs, Patent Medicine
- OVH Glues, Paste
- OVI Greases, Tallow

OTHER CHEMICALS (Continued)

OVJ Oils, Not Pet.

OVK Perfumes, Cosmetics

OVL Other chemicals

OO CIGAR & TOBACCO FACTORIESCLAY, GLASS & STONE INDUSTRIES

01 Brick, tile, terra cotta

02A Mirrors

02B Other glass factories

03A Cement

03B Other

04 Marble & stone yards

05 Potteries

2VA Roofing -- Asphalt

2VB Asbestos products

2VC Grinding wheels, sandpaper

2VD Other clay, glass & stone -- rock wool

CLOTHING INDUSTRIES

06 Corset factories

07 Glove factories

08 Hat factories (felt)

09 Shirt, collar and cuff

IV Suit, coat and overall

10A Women's furnishings

10B Fur clothing

FOOD & ALLIED INDUSTRIES

- 11 Bakeries
- 12 Butter, cheese and milk
- 13 Candy factories
- 14 Fish curing & packing
- 15 Flour & grain mills
- 16 Fruit & vegetable canning, etc.
- 17 Slaughter & packing houses
- 18 Sugar factories & refineries
- 19A Ice manufacturing
- 19B Spices, coffee
- 19C Other
- 20A Liquor & beverage industries (soft)
- 20B Alcoholic beverages

IRON & STEEL MACHINERY AND VEHICLE INDUSTRIES

- 21 Agricultural implement factories
- 22 Automobiles
- 23 Auto repair shops
- 24B Blast furnaces & steel rolling mills (except wire)
- 24A Wire mills
- 25 Car and railroad shops
- 26 Ship and boat building
- 27 Wagon and carriage
- 28A Air craft
- 28B Foundries

IRON & STEEL MACHINERY AND VEHICLE INDUSTRIES (Continued)

- 28C Machine shops
- 28D Small machinery implements and cutlery
- 28E Heavy machinery
- 28F Other
- 29 Not specified metal industries

METAL INDUSTRIES, EXCEPT IRON AND STEEL

- 3V Brass mills, musical instruments
- 30 Clock and watch factories
- 31 Copper factories
- 32 Gold & silver factories
- 33 Jewelry factories
- 34 Lead and zinc factories
- 35 Tinware, enamelware, etc.
- 36A Aluminum
- 36B Metal specialties, novelties
- 36C Other
- 36D Electro plating, metal finishing

LEATHER INDUSTRIES

- 37 Harness and saddle
- 38 Leather belt, leather goods, etc.
- 39 Shoe factories
- 40 Tanneries
- 41 Trunk, suitcase and bag

LUMBER & FURNITURE INDUSTRY

- 42A Furniture factories
- 42B Caskets
- 43 Piano and organ
- 44 Saw and planing mills
- 45 Other woodworking

PAPER, PRINTING AND ALLIED INDUSTRY

- 46A Blank book, envelope, tag, paper bag, etc.
- 46B Wax paper
- 46C Wallpaper
- 47 Paper and pulp mills
- 48 Paper box factories
- 49A Book binding
- 49B Engraving and developing
- 49C Lithographing
- 49D Newspaper
- 49E Stereotype
- 49F Other

TEXTILE INDUSTRIES

- 5V Cotton mills
- 50 Knitting mills
- 51 Silk mills
- 52 Textile dyeing, finishing and printing mills
- 53 Woclen and worsted mills
- 54 Carpet mills

OTHER TEXTILE MILLS

- 55 Hemp, jute and linen mills
- 56 Lace and embroidery mills
- 57 Rope and cordage factories
- 58 Sail, and awning and tent
- 59 Other and not specified textile mills

MISCELLANEOUS MANUFACTURING INDUSTRIES

- 60 Broom and brush
- 61 Button factories
- 62 Electric light and power
- 63A Batteries
- 63B Lamps
- 63C Other
- 64 Independent hand trades
- 65 Rubber factories
- 66 Straw factories
- 68A Dental appliances and supplies
- 68C Sign
- 68D Toys and novelties
- 68E Hair goods, artificial flowers
- 68F Lenses
- 68G Lamp and window shades
- 68H Other not specified

PERSONAL SERVICE

97 Laundries

98 Cleaning, dyeing and pressing shops

MANUFACTURING & MECHANICS

EXTRACTION SERVICES

PERSONAL SERVICES

GRAND TOTAL

INDUSTRY INDEX

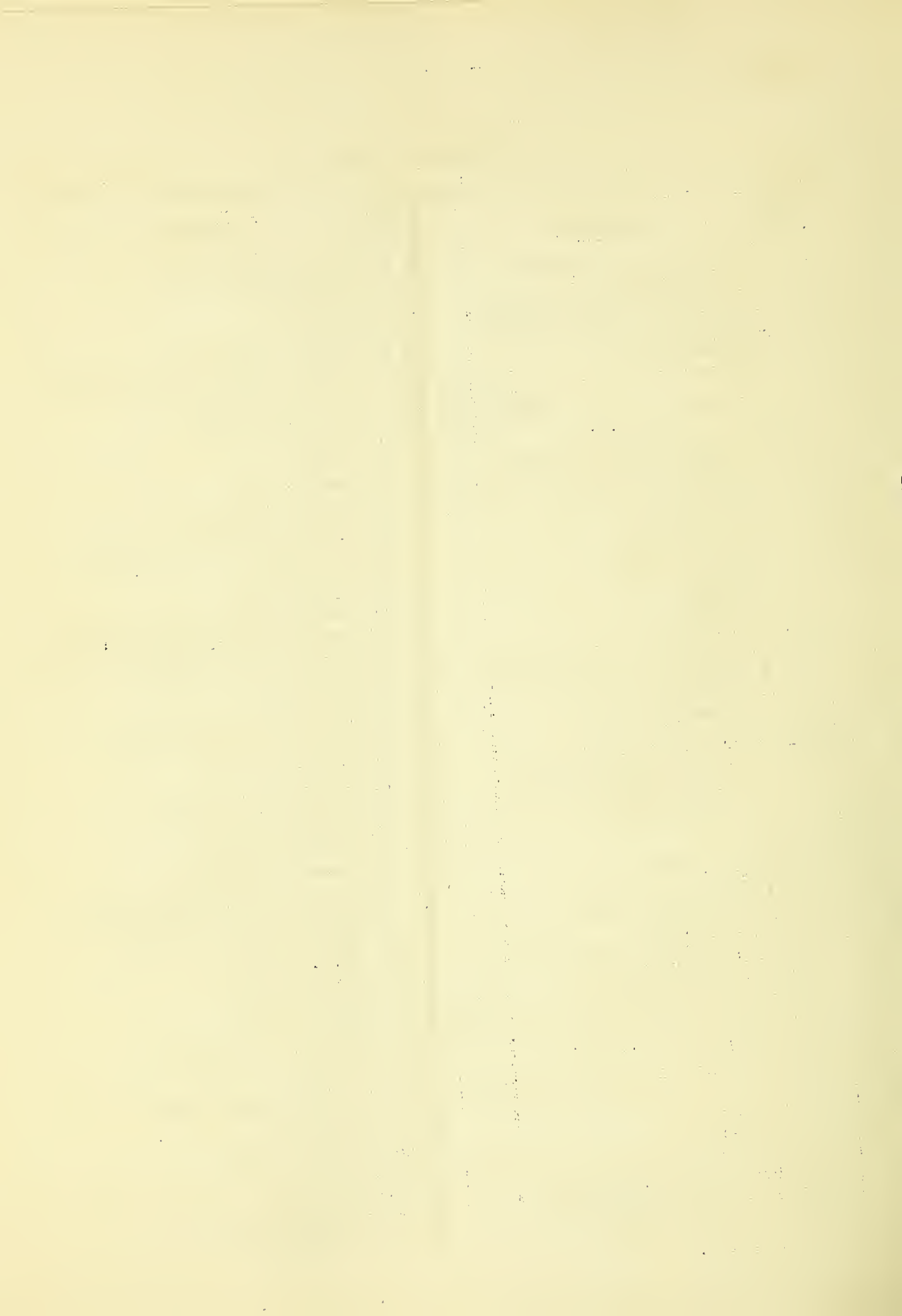
Sym- bol	Industry	Sym- bol	Industry
1 7	Abattoir	0 V	Axle grease
2 V	Abrasives	7 6	Babbitt metal, white metal, type metal, and solder
0 V	Acids	2 7	Baby carriages
2 8	Adding machines	5 9	Bags (except paper and leather)
8 2	Advertising agency	4 1	Bags (leather)
	Advertising novelties) Paper-46	4 6	Bags (paper)
) Metal-36	0 V	Bakelite
0 4	Agateware	1 1	Bakery
2 1	Agricultural implements	0 V	Baking powder
2 8	Aircraft and parts	6 8	Band and orchestral instruments
7 0	Airport or air transportation	8 3	Banking and brokerage
0 V	Alcohol	2 4	Bar, beam, or bloom mill
1 9	Alfalfa mill	2 8	Barbed wire
0 V	Alum	4 5	Barrels (Metal - 28)
3 6	Aluminum	V 7	Barytes mine
3 6	Aluminum ware	4 5	Baskets
X 3	Ammunition	6 3	Battery factory
2 8	Apiarists' supplies	2 3	Battery station or shop
6 3	Arc and incandescent lamps	V 7	Bauxite mine
6 8	Art goods (except statuary)	6 8	Bead work
6 8	Artificial feathers	4 7	Beaver board factory
6 8	Artificial flowers	5 9	Bedding factory
5 9	Artificial leather	3 V	Bells
6 8	Artificial limbs	3 8	Belting (leather)
0 3	Artificial stone	6 9	Belting (n. s. ¹)
6 8	Artists' materials	6 5	Belting (rubber)
V 7	Asbestos mine	5 V	Belting (textile)
2 V	Asbestos products	2 4	Bessemer converter
V 7	Asphalt mine	2 0	Beverages
2 V	Asphalt works	2 8	Bicycles
6 8	Athletic goods	4 2	Billiard tables and materials
2 8	Augers and bits	0 V	Blacking, stains, and dressings
8 9	Automobile agency or accessories store	4 6	Blank books
2 2	Automobile bodies and parts	5 3	Blankets and steamer rugs (wool)
2 2	Automobile factory	2 4	Blast furnace
8 9	Automobile filling station	5 2	Bleachery (textile)
7 3	Automobile laundry or greasing station	0 V	Bleaching materials
2 3	Automobile repair shop	1 0	Blouses or shirt waists
8 9	Automobile service station (filling station)	0 V	Blue vitriol
2 3	Automobile service station (repair shop)	0 V	Blueing
8 9	Automobile store	2 6	Boat building
2 2	Automobile truck factory	2 8	Boiler shop
5 8	Awning factory	2 8	Bolts, nuts, washers, and rivets
2 8	Axes and hatchets	0 V	Bone black
		4 9	Bookbinding
		3 9	Boot and shoe cut stock

¹
Not specified.

INDUSTRY INDEX

Sym- bol	Industry	Sym- bol	Industry
3 9	Boot and shoe findings	6 8	Cameras and kodaks
3 9	Boots (felt)	3 5	Can factory
3 9	Boots and shoes (leather)	0 V	Candles
6 5	Boots and shoes (rubber)	1 3	Candy
0 V	Borax factory	6 8	Canes (wooden-45)
V 7	Borax mine	1 6	Cannery (fruit and vegetable)
	Bottle caps and seals	2 5	Car or railroad shop
		2 5	Car wheel works
		0 V	Carbide works
0 2	Bottle factory	0 V	Carbon
2 0	Bottling works (n.s. ¹)	0 V	Carbon black
4 2	Bowling alleys and accessories	0 V	Carbon paper
4 7	Box board factory	2 V	Carborundum mill
4 4	Box shooks	4 6	Card cutting and designing
4 4	Boxes (cigar)	4 6	Cardboard
4 8	Boxes (paper)	5 4	Carpet mill
4 4	Boxes (wood)	5 4	Carpets, rag
5 9	Braids	2 7	Carriage and wagon materials
2 8	Brake shop	2 7	Carriages and sleds, children's
6 8	Brands	2 7	Carriages and wagons
3 V	Brass factory or foundry	X 3	Cartridges
0 6	Brassieres	2 8	Cash registers
1 5	Breakfast foods	4 2	Caskets and accessories
2 0	Brewery	2 8	Cast iron pipe
0 1	Brick factory or yard	2 8	Castings (iron)
7 1	Bridge construction or maintenance	0 V	Celluloid novelties
2 8	Bridge works	0 V	Cellulose products
2 V)		4 7	Celotex factory
or (Briquettes	0 3	Cement and gypsum
0 3)		0 3	Cement block factory
3 6	Britannia factory	1 5	Cereals and breakfast foods
8 3	Brokerage	3 2	Chains (gold or silver)
6 0	Brooms and brushes	2 8	Chains (iron)
2 8	Buckles (iron)	3 6	Chains (n.s. ¹)
2 8	Builders' hardware	3 6	Chandeliers
8 3	Building and loan association	4 2	Chair factory
X 1	Building industry	0 4	Chalk
5 5	Burlap	X 2	Charcoal and coke
1 2	Butter and butter reworking	1 2	Cheese
1 9	Butterine factory	0 V	Chemical laboratory
6 1	Buttons	0 V	Chemicals
8 V	Cab company	1 3	Chewing gum
4 2	Cabinet factory	0 5	China decorating
2 8	Calculating machines	0 5	Chinaware
4 9	Calendars (printed)	2 8	Chisels and planes
5 V	Calico factory	V 7	Chloride mine

¹Not specified.



INDUSTRY INDEX

Sym- bol	Industry	Sym- bol	Industry
1 9	Chocolate and cocoa	4 5	Cooperage or cooper shop
1 9	Cider	3 1	Copper factory or refinery
0 0	Cigars and cigarettes	V 3	Copper mine
V 7	Cinnabar mine	3 1	Copper smelter
0 5	Clay factory or yard	0 V	Copperas
9 8	Cleaning, dyeing or pressing shop	5 7	Cordage and twine
0 V	Cleansing preparations	1 9	Cordials and flavoring sirups
3 0	Clock and watch materials	5 V	Corduroy
3 0	Clocks and watches	4 5	Cork cutting
5 2	Cloth sponging and refinishing	3 5	Cornices - material
2 8	Clothes wringers	0 6	Corsets and brassieres
1 0	Clothing (except suits, coats, cloaks, and overalls)	0 V	Cosmetics
1 V	Clothing (suits, coats, cloaks, and overalls)	5 9	Cotton batting
6 8	Clubs, golf and Indian	5 2	Cotton finishing mill
V 2	Coal mine	6 8	Cotton gin
0 V	Coal tar products	5 V	Cotton mill
1 V	Coat factory (fabric)	6 8	Cotton press or compress - 28 if press mfg.
1 0	Coat factory (fur)	0 V	Cottonseed oil, cake, and meal
1 V	Coat factory (leather or leatherette)	1 1	Crackers
6 5	Coat factory (rubber)	2 8	Cranes
V 7	Cobalt mine	4 4	Crates
1 9	Cocoa factory	6 8	Crayons
1 9	Coffee roasting and grinding	0 V	Cream of tartar
4 2	Coffins and burial cases	2 8	Cream separators
X 2	Coke works	1 2	Creamery
8 8	Cold storage plant	0 V	Creosote
0 9	Collars and cuffs	2 4	Crucible furnace
9 4	College or university	0 5	Crucibles
0 V	Combs and hairpins (celluloid)	3 5	Culvert factory
6 9	Combs and hairpins (except celluloid, metal, and rubber)		Curtain rod factory-(metal-28 or 36 wood - 45)
6 9	Combs (material n.s. ¹)	2 8	Cutlery and edge tools
6 5	Combs (rubber)	0 V	Cyanides
5 9	Comforts and quilts	2 8	Dairymen's supplies
8 3	Commission house or company	6 8	Dental goods or instruments - material
0 3	Concrete products	4 2	Desk factory
1 2	Condensed milk	2 0	Distillery (liquor)
1 3	Confectionery	8 0	Dock construction
X 1	Construction work (building)	4 4	Door and window screens (wood)
8 0	Construction work (dock, levee, wharf)	2 8	Doors and shutters (iron)
7 1	Construction work (street, road, sewer, or bridge)	4 4	Doors and shutters (wood)
		1 0	Dress factory
		5 6	Dress trimmings, etc.
		2 1	Drills (agricultural implements)
		0 V	Drug grinding

¹Not specified.

INDUSTRY INDEX

Sym- bol	Industry	Sym- bol	Industry
0 V	Druggists' preparations	X 4	Fertilizer factory
0 V	Dry ice	4 7	Fiber board factory
X 6	Dryers (paint)	5 5	Fiber works (hemp or jute)
5 2	Dyehouse	2 8	Files
9 8	Dyeing and pressing shops	X 6	Fillers (used in painting)
0 V	Dyestuffs, mordants, and sizes	0 V	Films or camera
X 3	Dynamite	2 8	Firearms
6 3	Dynamos	2 8	Fire escapes
0 5	Earthen and stone ware	2 8	Fire extinguishers
5 9	Elastic woven goods (weaving)	2 8	Fireless cookers
6 3	Electric heating apparatus	X 3	Fireworks
6 2	Electric light or power plant	6 8	Fish bait or fly factory
6 3	Electric lighting fixtures	1 4	Fish curing and packing
7 8	Electric railway	5 9	Flags and banners
6 3	Electric signs	1 9	Flavoring extracts
6 3	Electrical machinery, apparatus, and supplies	5 5	Flax mill
3 6	Electroplating (n.o.s. ²)	4 4	Flooring mill (wood)
2 8	Elevators (passenger and freight)	1 5	Flour or grain mill
8 4	Elevator (grain)	7 0	Flying field
5 6	Embroideries	1 9	Food preparations (n.o.c. ³)
2 V	Emery and other abrasive wheels	V 1	Forestry
V 7	Emery mine	2 8	Forging factory
2 V	Emery paper and cloth	3 V	Foundry (brass)
3 5	Enamelled ware	2 8	Foundry (iron)
3 5	Enameling (n.o.s. ²)	2 9	Foundry (n.s. ¹)
2 8	Engines, steam, water, and gas	6 8	Foundry supplies
6 8	Engravers' materials	4 5	Frames, mirror or picture
4 9	Engraving, steel and copper plate	2 8	Freg shop
4 9	Engraving, wood	1 6	Fruit and vegetable canning
4 9	Engraving and diesinking (n.o.s. ²)	1 6	Fruit drying
4 6	Envelopes	6 8	Fuel, manufactured
4 5	Excelsior mill	1 0	Fur coats
X 3	Explosives	1 0	Fur goods
7 2	Express company (any)	2 8	Furnaces (for heating buildings)
6 9	Factory (not specified)	1 0	Furnishing goods (men's)
6 8	Fancy articles (n.o.s. ²)	4 2	Furniture
6 8	Featherbone factory	1 0	Furs, dressed
6 8	Feather pillows and beds	X 3	Fuse
6 8	Feathers and plumes	2 8	Galvanizing
1 5	Feed mill	6 8	Games
7 4	Feed stable	7 3	Garage
3 9	Felt and wool boots and shoes	V 7	Garnet mine
0 8	Felt hats	1 0	Garters
5 3	Felt or felt mill	3 6	Gas fixtures
		2 8	Gas machines
		2 8	Gas meters and water meters

¹Not specified.²Not otherwise specified.³Not elsewhere classified.

INDUSTRY INDEX

Sym- bol	Industry	Sym- bol	Industry
X V	Gas well	6 8	Hones and whetstones
X 5	Gas works	5 9	Horse blankets, carriage robes, etc.
0 V	Gases (except illuminating and heating)	2 8	Horseshoes
6 5	Gaskets (rubber)	6 5	Hose, rubber or woven
0 2	Glass	5 0	Hosiery mill
0 2	Glass cutting, staining, and ornamenting	2 8	Hot air furnaces
0 7	Gloves and mittens (all materials)	6 8	House furnishing goods (n.o.s. ²)
1 8	Glucose	1 2	Ice cream
0 V	Glue and gelatine	1 9	Ice, manufactured
0 V	Glycerin	2 1	Implement factory
V 4	Gold mine	2 8	Incinerators
3 2	Gold or silver factory	2 8	Incubators and brooders
3 2	Gold or silver leaf and foil	0 V	Ink
8 4	Grain elevator	6 8	Instrument cases
1 5	Grain mill	6 8	Instruments, professional and scientific
0 V	Graphite, ground and refined	4 7	Insulating board factory
V 7	Graphite mine	6 3	Insulator works
5 9	Grass carpet or matting	8 5	Insurance
0 v	Greases (all)	2 4	Iron furnace
7 3	Greasing station (auto)	2 4	Iron rod mill
2 V	Grindstones	6 8	Ivory, shell, or bone work
1 5	Grist mill	V 7	Jade mine
X 4	Guano works	X 6	Japanning (n.o.s. ²)
2 8	Guns and pistols	X 6	Japans
0 3	Gypsum	3 3	Jewelry
6 8	Hair work	4 9	Job printing or job press
5 9	Haircloth	5 5	Jute mill
0 V	Hairpins (celluloid)	1 0	Kimonos or negligees
5 7	Hammocks	5 0	Knitting mill
6 5	Hand stamps	6 8	Kodaks
1 0	Handkerchiefs	4 6	Labels and tags
2 8	Hardware	5 6	Lace or embroidery mill
3 7	Harness and saddles	X 6	Lacquers
2 1	Harvesting machinery	0 V	Lamp black
5 9	Hat and cap materials	3 6	Lamps and lanterns
6 6	Hats, straw	3 3	Lapidary work
0 8	Hats (wool or felt)	1 7	Lard
1 0	Hats and caps (except felt, straw, and wool)	4 5	Lasts
6 8	Heating plant	4 4	Lath mill
5 5	Hemp or jute mill	2 8	Lathe factory
4 5	Hogsheads and barrels (wood)	9 7	Laundry
3 2	Hollow ware (silver)	2 8	Lawn mowers
4 5	Hollow ware (wood)	3 4	Lead, bar, pipe, and sheet
		3 4	Lead factory
		V 6	Lead mine

²Not otherwise specified.

Sym- bol	Industry	Sym- bol	Industry
3 4	Lead smelting and refining	1 7	Meat canning
3 8	Leather belts	0 V	Medicine factory
1 V	Leather (or leatherette) coats	8 0	Merchant marine
3 8	Leather goods (n.o.s. ²)	3 6	Metal factory (not elsewhere classified)
3 8	Leather novelties	2 9	Metal factory (not specified)
3 8	Leather pocketbooks	3 6	Metal novelties
4 1	Leather traveling bags	3 5	Metal shingles and ceilings
8 0	Levee construction	2 8	Meters, gas or water
1 3	Licorice	2 V	Mica factory
2 8	Lightning rods	V 7	Mica mine
0 3	Lime	6 8	Microscopes, opera glasses, etc.
5 5	Linen mill	1 2	Milk products
5 9	Linoleum	5 9	Millinery factory
0 V	Linseed oil, cake, and meal	6 8	Millstones
2 0	Liquors and beverages	V 8	Mine (not specified)
4 9	Lithographing	2 0	Mineral and soda water
7 4	Livery or feed stable	2 V	Mineral wool
8 3	Loan association	2 V	Minerals and earths, ground
3 V	Locks (brass)	0 2	Mirrors and looking-glasses
2 8	Locks, hinges, etc. (iron)	6 8	Miscellaneous manufacturing (n.e.c. ³)
2 8	Locomotives	6 8	Models and patterns (except paper patterns)
V 1	Log or lumber camp	1 9	Molasses
4 5	Looking-glass and picture frames	0 4	Monuments and tombstones
0 2	Looking-glasses	5 9	Mops and dusters
2 8	Loom factory	4 0	Morocco factory
4 4	Lumber mill	5 V	Mosquito netting
V 1	Lumber or log camp	7 V	Motion picture films
0 V	Lye	6 8	Motion picture machines
1 9	Macaroni	2 6	Motor boats
2 8	Machine shop	2 8	Motorcycles
2 8	Machine tools	6 3	Motors
2 8	Machinery (all used in manu- facturing)	0 V	Mucilage and paste
6 8	Mail bag repairing	6 8	Musical instruments and materials- (material) (n.o.s. ²)
7 6	Mail transportation	2 8	Nails
2 0	Malt	5 9	Narrow fabrics (n.s. ¹)
V 7	Manganese mine	5 V	Narrow fabrics (cotton)
6 9	Manufacturing (not specified)	0 9	Neckties or neckwear
0 4	Marble, granite, slate, and other stone products	2 8	Needles, pins, hooks, and eyes
0 4	Marble or stone yard	5 7	Nets or seines
2 6	Masts, spars, oars, and rigging	4 9	Newspaper
0 V	Matches	3 6	Nickel
5 9	Mats and matting (from cocoa fiber or grass)	0 V	Nitrate plant
5 9	Mattresses		

¹Not otherwise specified. ²Not otherwise specified. ³Not elsewhere
classified.

INDUSTRY INDEX

Sym- bol	Industry	Sym- bol	Industry
X 3	Nitroglycerin	0 V	Pencils, lead
6 9	Not specified factory	6 8	Pens, fountain and stylographic
1 9	Not specified food factory	3 2	Pens, gold
9 9	Not specified industry or service	2 8	Pens, steel
2 9	Not specified metal factory	0 V	Perfumery and cosmetics
5 9	Not specified textile mill	X 7	Petroleum refining
8 1	Not specified transportation	3 6	Pewter ware
3 3	Novelty jewelry	6 8	Phonographs and graphophones
6 8	Novelty works (material)	X 4	Phosphate (fertilizer) works
5 9	Oakum	V 7	Phosphate mine
V 7	Ocher mine	4 9	Photo-engraving
2 8	Oil burners	6 8	Photographic apparatus
0 V	Oil (n.o.s. ²)	0 V	Photographic materials
7 5	Oil pipe line	4 3	Piano and organ materials
X V	Oil well	4 3	Pianos
X 7	Oil works (n.s. ¹)	1 6	Pickling and preserving fruits and vegetables
5 9	Oilcloth and linoleum	1 1	Pie, pastry, etc.
0 V	Oils, essential	2 8	Pipe foundry
1 9	Oleomargarine	7 5	Pipe line
2 4	Open-hearth furnace	2 4	Pipe mill
6 8	Optical goods	6 8	Pipes, tobacco
4 3	Organs	4 4	Planing mill
2 8	Ornamental iron factory	0 3	Plaster board factory
1 V	Overall factory	0 3	Plaster mill
1 4	Oyster canning	0 V	Plastics
V 0	Oyster dredging	2 4	Plate mill
1 7	Packing house (meat or n.s. ¹)	3 2	Plated ware (knives, forks, spoons, etc.)
X 6	Paint and varnish	3 2	Platinum
V 7	Paint ore mine	4 6	Playing cards
1 0	Pajamas	2 1	Plows and cultivators
1 V	Pants factory	2 8	Plumbers' supplies (iron or n.s. ¹)
4 7	Paper and pulp	0 5	Plumbers' supplies (pottery)
4 6	Paper bags	5 4	Plush (carpet)
4 8	Paper boxes	5 1	Plush (silk)
4 6	Paper goods (n.o.s. ²)	2 8	Pocket knives
6 8	Paper novelties	3 8	Pocketbooks, purses, and card cases
5 6	Paper patterns	0 V	Polishing preparations
0 V	Patent medicines and compounds	0 5	Porcelain ware
6 8	Patterns (except paper)	7 6	Postal service
0 3	Paving materials (cement, stone, etc.)	0 V	Potash and Potassium salts
4 5	Paving materials (wood)	0 5	Pottery
1 9	Peanuts, grading, roasting, cleaning, etc.	1 7	Poultry killing and dressing

¹Not specified. ²Not otherwise specified. ³Not elsewhere classified.

INDUSTRY INDEX

Sym- bol	Industry	Sym- bol	Industry
2 8	Poultrymen's supplies	6 5	Rubber belts
X 3	Powder	6 5	Rubber coats
1 9	Prepared food for animals and fowls	6 5	Rubber goods
9 8	Pressing shop or pressing club	6 5	Rubber hose
5 2	Print works	6 5	Rubber stamps
4 9	Printing and publishing	6 5	Rubber tires
6 8	Printing materials (n.o.s. ²)	5 4	Rugs
6 8	Professional instruments	4 5	Rules, ivory and wood
9 3	Public service	3 7	Saddles
4 9	Publishing house	2 8	Safes and vaults
2 4	Puddling mill	5 8	Sails, awnings, or tents
4 5	Pulp goods	0 V	Saloratus factory
2 8	Pumps	X 0	Salt factory, well, or works
V 9	Quarry (any)	0 V	Salts (chemical)
V 7	Quicksilver mine	0 3	Sand mill or works
5 9	Quilt mill	2 V	Sandpaper
2 8	Radiators and heating boilers	V 7	Sapphire mine
6 V	Radio broadcasting or transmitting station	1 4	Sardine factory
6 3	Radios and radio apparatus	4 4	Sashes and doors
2 4	Rail mill	4 1	Satchels and suitcases (leather)
2 5	Railroad repair shop	1 7	Sausage
1 V	Raincoats (except rubber)	4 4	Sawmill
4 5	Rattan and willow ware	2 8	Saws
X 8	Rayon	2 8	Scales and balances
2 8	Razors	1 0	Scarfs (any)
8 6	Real estate	9 4	School or college (any)
6 8	Records, phonograph and graphophone	6 8	Scientific instruments
0 1	Refractory	2 8	Scissors, shears, and clippers
4 2	Refrigerators (except mechanical)	4 4	Screen door factory
2 8	Refrigerators (mechanical)	2 8	Screen wire
5 9	Regalia, badges, and emblems	4 4	Screens (door or window)
9 0	Retail store or retail trade	2 8	Screws (metal)
5 1	Ribbon mill	6 3	Searchlights, projectors, and focusing lamps
1 5	Rice cleaning and polishing	1 5	Seed factory or house
7 1	Road construction or maintenance	2 1	Seeders, planters, and drills
2 4	Rod mill (iron)	7 1	Sewer construction or maintenance
1 5	Roller mill (flour)	0 1	Sewer pipe
2 4	Rolling mill (steel)	2 8	Sewing machine cases
2 V	Roofing materials	2 8	Sewing machines
5 7	Rope or cordage factory	5 9	Shade-cloth factory
6 7	Rosin	2 8	Sheet iron work
		2 4	Sheet mill
		0 3	Sheet rock factory
		X 6	Shellac
		X 3	Shells (for cannon, etc.)

¹Not specified. ²Not otherwise specified.

INDUSTRY INDEX

Syn- bol	Industry	Syn- bol	Industry
4 4	Shingle mill	2 8	Steam fittings
2 6	Ship and boat building	6 8	Steam heating plant
0 9	Shirts	6 8	Steam packing
5 3	Shoddy	2 5	Steam or street railroad cars
3 9	Shoes (except rubber)	6 2	Steam power plant
5 9	Shoestring factory	2 8	Steam pumps
4 5	Shooks mill (barrel)	7 7	Steam railroad
4 4	Shooks mill (box)	2 8	Steam shovel factory
2 8	Shovels, spades, and hoes	2 8	Steel barrels, kegs, and drums
4 2	Show cases	2 4	Steel bars and rods
4 5	Shutters	2 4	Steel plates and sheets
6 8	Signs (except electric)	2 4	Steel rails
V 7	Silica mine	2 4	Steel rolling mill
5 1	Silk mill	2 4	Steel works
V 4	Silver mine	6 8	Stencils and brands
3 2	Silversmithing and silverware	6 8	Stereopticons and stereoscopes
1 9	Sirup	4 9	Stereotyping and electrotyping
1 2	Skimming station	5 0	Stockinet factory
4 5	Slat factory	8 7	Stockyards
0 4	Slate (except quarrying)	0 3	Stone crushing
1 7	Slaughtering and meat packing	0 5	Stoneware and earthenware
2 7	Sled factory	4 2	Store and office fixtures
1 0	Smocks	0 V	Stove polish
0 0	Snuff	6 3	Stoves, electrical
X 9	Soap	2 8	Stoves, gas and oil
0 V	Soda or soda ash	2 8	Stoves and ranges (except electrical)
2 0	Soda water	6 6	Straw or strawboard factory
2 8	Soda water apparatus	6 6	Straw or straw hat factory
3 6	Solder	7 1	Street construction or maintenance
0 V	Solvay works	7 8	Street railway
V 7	Spar mine	2 8	Structural ironwork (not made in steel mills)
3 4	Spelter	2 4	Structural steel
1 9	Spice roasting and grinding	0 3	Stucco works
4 5	Spoke factory (n.s. ¹)	1 8	Sugar factory or refinery
6 8	Sponge house	I V	Suit, coat, or cloak factory
6 8	Sporting and athletic goods	4 1	Suitcases (leather)
2 8	Spring bed factory	4 7	Sulphite mill
2 8	Spring factory or shop	0 V	Sulphur
X 3	Squib factory	V 7	Sulphur mine
3 5	Stamped and enameled ware	6 8	Surgical appliances (Material)
3 5	Stamping works (metal)	1 0	Suspenders and garters
0 V	Starch	6 3	Switchboards
4 6	Stationery goods (n.o.s. ²)	2 8	Table cutlery (except silver and plated ware)
0 5	Statuary and earthen art goods		
4 5	Staves		
2 8	Steam and hot water heating apparatus		

¹Not specified.²Not otherwise specified.

INDUSTRY INDEX

Sym- bol	Industry	Sym- bol	Industry
4 2	Table factory	5 9	Trimmings (n.o.c. ³)
2 8	Tacks	8 V	Truck company (transportation)
4 6	Tag factory (metal - 36)	4 1	Trunks
1 V	Tailor shop	8 3	Trust company or bank
V 7	Talcum mine	4 5	Tub factory
0 V	Talcum mill	2 4	Tube mill or works
0 V	Tallow	V 7	Tungsten mine
2 8	Tanks (iron and steel)	6 7	Turpentine distillery
4 0	Tannery	6 7	Turpentine farm
0 V	Tanning materials	V 7	Turquoise mine
5 V	Tape and webbing (cotton)	5 7	Twine
0 V	Tar	3 4	Type founding
2 V	Tar paper	0 V	Typewriter ribbons
8 V	Taxicab company	2 8	Typewriters and supplies
6 3	Telegraph and telephone apparatus	6 8	Umbrellas and canes
7 9	Telegraph or telephone	4 2	Undertakers' goods
5 8	Tents	1 0	Underwear (except knitted)
2 4	Terneplate	5 0	Underwear (knitted)
0 1	Terra-cotta factory	5 9	Upholstering materials
5 2	Textile dyeing	7 6	U. S. Postal Service
5 2	Textile finishing or printing	6 3	Vacuum cleaners
2 8	Textile machinery and parts	4 1	Valises and traveling bags
6 8	Theatrical scenery	3 V	Valves
5 V	Thread, cotton	X 6	Varnish
5 1	Thread, silk	2 8	Vault lights and ventilators
2 1	Threshing machinery	1 6	Vegetable canning
4 4	Tie plant (wood)	5 1	Velvet factory
0 1	Tile or terra-cotta	4 5	Vencer works
V 1	Timber, log, or lumber camp	4 5	Venetian blinds
3 5	Tin and sheet iron work	2 8	Ventilating fans
3 6	Tin foil	1 9	Vinegar
V 7	Tin mine	2 7	Wagons and carriages
2 4	Tin-plate and terneplate	4 7	Wall board factory
3 5	Tinware and enameledware	4 6	Wall paper
0 0	Tobacco factory	0 3	Wall plaster
4 5	Tobacco pipe factory	8 8	Warehouse
0 V	Toilet preparations	2 8	Washing machines
0 4	Tombstones	5 9	Waste
2 8	Tools and cutlery	3 0	Watches and watchcases
X 3	Torpedoes	8 0	Water transportation
6 8	Toys and games	2 8	Water wheels
2 8	Tractor factory	3 V	Weather strips (metal)
8 V	Transfer company	4 5	Weather strips (wood)
6 3	Transformers (electric)	2 8	Welding, iron and steel
5 6	Trimmings (dress)	8 0	Wharf construction
		2 8	Wheelbarrows

³Not elsewhere classified.

INDUSTRY INDEX

Sym- bol	Industry	Sym- bol	Industry
6 8	Whips		
2 0	Whiskey or rum		
X 6	White lead		
3 6	White metal		
4 5	Willow ware		
2 8	Windmills		
4 4	Window and door screens		
2 8	Window sash and frames (iron)		
4 4	Window sash and frames (wood)		
5 9	Window shades and fixtures		
2 0	Winery		
3 V	Wire (brass)		
2 4	Wire mill		
2 4	Wire (n.s. ¹)		
2 8	Wire rope and cable		
2 8	Wire screen factory		
2 8	Wire work		
0 V	Wood alcohol		
4 5	Wood carpet		
0 V	Wood distillation		
4 5	Wood novelties		
0 V	Wood preserving		
4 5	Wooden goods (n.o.s. ²)		
4 5	Wood-turning shop		
3 9	Wool boot factory		
5 3	Wool pulling		
5 3	Wool scouring		
5 3	Woolen or worsted mill		
2 8	Woven wire fencing		
1 0	Wrappers and dresses		
2 8	Wrought pipe		
5 V	Yarn (cotton)		
5 9	Yarn (n.s. ¹)		
5 3	Yarn (woolen)		
0 V	Yeast		
3 4	Zinc factory		
V 6	Zinc mine		
3 4	Zinc smelter or refinery		

¹Not specified.²Not otherwise specified.

INDUSTRIES IN INDIANA - CLASSIFIED

Indiana State Board of Health
Bureau of Industrial Hygiene

Symbol Industry	1930 Census		Industrial File		Sample For		Survey
	Plants	Emp.	Plants	Emp.	Plants	Emp.	% plt.
		(24,034)*					
<u>Extraction of Minerals</u>	452	18,279	116	9,894	78	6,990	70.6
V2 Coal Mines	235	13,711	91	8,192	58	5,558	67.8
V9 Quarries	217	4,568	21	1,652	16	1,381	83.6
XV Oil and Gas Wells	--	--	4	51	4	51	100.0
		(440,515)*					
<u>Manufacturing & Mech. Ind.</u>	--	-----	3,501	366,635	2,445	249,188	68.0
		(17,704)*					
<u>Chemical & Allied Ind.</u>	200	7,969	208	16,182	165	13,881	85.8
X2 Charcoal & Coke Works	4	1,761	2	19	2	19	100.0
X3 Explosives, Ammunition & Fireworks' factories	--	--	7	128	7	128	100.0
X4 Fertilizer Factories	11	339	18	353	13	242	68.6
X5 Gas Works	33	1,804	6	975	6	975	100.2
X6 Paint & Varnish Ind.	27	876	28	1,321	21	994	75.2
X7 Petroleum Refineries	--	--	9	3,409	6	3,206	94.0
X8 Rayon Factories	--	--	1	150	1	150	100.0
X9 Soap Factories	7	76	4	1,449	3	834	57.5
<u>Other Chemicals</u>							
OVA Baking Powder	--	--	2	366	2	366	100.0
OVB Blacking Stains, etc.	--	--	4	461	4	461	100.0
OVC Carbon Paper, Ink	--	--	2	45	2	45	100.0
OVD Chemicals, Dyes	--	--	40	2,482	31	1,952	78.6

*Figures in parenthesis from Department of Commerce, Bureau of the Census (1932), 15th Census of the United States: 1930. Population Vol. 3, part 1, page 691. Other figures revised and obtained from U. S. Department of Commerce, Bureau of the Census, (1933), 15th Census of the United States, Manufactures: 1929. State Series, Table 12. General Statistics for the State by Industries, 1929.

TALLEY SHEET

INDUSTRIES IN INDIANA - CLASSIFIED

Symbol Industry	1930 Census		Industrial File		Sample For		Survey
	Plants	Emp.	Plants	Emp.	Plants	Emp.	% plt.
<u>Other Chemicals Con.</u>							
OVE Compressed Gases	9	125	8	196	7	181	92.3
OVG Drugs, Patent Medicine	45	716	30	2,507	24	2,406	96.0
OVH Glue, Paste	4	13	3	94	3	94	100.0
OVI Greases, Tallow	24	122	4	119	4	119	100.0
OVJ Oils, not pet.	--	--	2	22	2	22	100.0
OVK Perfumes, Cosmetics	13	311	12	173	9	129	74.5
OVI Other chemicals	20	1,826 (2,997)	26	1,913	18	1,558	81.4
00 Cigar & Tobacco Fac.	40	3,351 (22,449)	16	1,808	11	1,365	75.5
<u>Clay, Glass & Stone Ind.</u>							
01 Brick, Tile and Terra- Cotta	--	--	50	2,357	35	1,555	66.0
02 Glass factories	36	8,202	33	8,471	24	5,433	64.1
03 Lime, Cement and Art- ificial Stone	7	352	103	3,349	63	2,730	81.5
03A Cement	100	650	43	3,153	28	2,889	91.6
03B Rock Wool	--	--	13	829	13	829	100.0
04 Marble and Stone Yards	59	4,233	29	432	23	387	89.6
05 Potteries	84	6,435	20	1,549	16	1,094	70.6
2VA Roofing & Asphalt	--	--	8	494	8	494	100.0
2VB Asbestos Products	--	--	4	524	4	524	100.0
2VC Grinding Wheels, Sandpaper	--	-- (18,891)	2	20	2	20	100.0
<u>Clothing Industries</u>							
06 Corset Factories	5	503	2	485	2	485	100.0
07 Glove Factories	23	2,716	23	2,864	16	2,311	80.7
08 Hat Factories (felt)	8	292	2	145	2	145	100.0
09 Shirt, Collar & Cuff	14	2,992	17	3,603	13	2,743	76.1
IV Suit, Coat & Overall	54	5,592	42	8,612	27	6,323	73.4
10 Other Clothing	28	3,773 (25,901)	52	6,770	33	4,316	63.7
<u>Food & Allied Ind.</u>							
11 Bakeries	469	5,556	139	4,919	87	2,962	60.2
12 Butter, Cheese & Milk	256	2,404	187	5,383	115	3,774	70.1
13 Candy Factories	45	1,340	19	772	14	552	71.5
15 Flour & Grain Mills	187	1,775	99	2,437	64	1,585	65.0
16 Fruit & Veg. Canning etc.	156	5,506	221	23,913	143	15,637	65.4
17 Slaughter & Packing Houses	89	6,481	58	5,085	37	3,335	65.6
18 Sugar Factories & Refineries	--	--	2	408	2	408	100.0
19 Other Food Factories	--	--	13	829	10	798	96.3
19A Ice Mfg.	121	1,292	55	1,197	35	810	67.7
19B Spices, Coffee	19	111	6	185	6	185	100.0
19C Other	--	--	7	101	7	101	100.0
20 Liquor & Beverage (soft)	132	755	58	802	39	477	59.5
20A Alcoholic Beverage	--	--	20	4,830	15	2,981	61.7

INDUSTRIES IN INDIANA - CLASSIFIED

Symbol Industry	1930 Census		Industrial File		Sample Plants	For Survey	
	Plants	Emp.	Plants	Emp.		Emp.	% plt.
<u>Iron & Steel Machinery</u>		(161,305)					
<u>Vehicle Industries</u>	810	153,616	664	147,001	447	91,258	62.0
21 Agricultural Implement	18	4,219	12	4,214	9	3,495	82.9
22 Automobiles	72	37,673	126	51,636	81	31,596	61.1
24 Blast Furnaces & Steel Rolling Mills	23	33,399	23	34,706	20	19,738	56.9
24A Wire Mills	18	968	18	3,197	12	1,867	58.4
25 Car & Railroad Shops	126	23,658	22	8,300	14	6,234	75.1
26 Ship & Boat Building	7	221	6	180	6	180	100.0
27 Wagon & Carriage	10	529	3	80	3	80	100.0
28 Other Iron & Steel Machinery	40	3,017	107	16,816	75	10,099	60.0
28A Aircraft	--	--	3	253	3	253	100.0
28B Foundries	332	30,494	92	11,503	59	7,042	61.2
28C Machine Shops	--	--	34	894	26	807	90.3
28D Small Machine Implt.	30	8,240	94	6,933	59	3,677	53.0
28E Heavy Mach.	120	10,314	36	2,121	26	1,498	70.6
28F Other	14	884	52	4,516	33	3,394	75.1
29 Not Specified Metal Ind.	--	--	31	1,652	21	1,298	78.6
<u>Metal Industries, Except Iron and Steel</u>		(7,146)					
3V Brass Mills, Musical Instruments	11	1,502	44	2,965	30	2,435	82.1
31 Copper Factories	46	718	2	262	2	262	100.0
32 Gold & Silver Factories	--	--	1	40	1	40	100.0
33 Jewelry Factories	11	226	8	358	8	358	100.0
34 Lead & Zinc Factories	--	--	8	1,131	8	1,131	100.0
35 Tinware, Enamelware etc.	37	3,018	67	11,418	46	10,403	91.1
36 Other Metal Factories	38	1,461	16	3,957	11	3,082	77.9
36A Aluminum	--	--	5	194	5	194	100.0
36B Metal Specialties Novelties	--	--	8	347	6	310	89.3
36C Others	--	--	1	10	1	10	100.0
36D Electro-plating Metal Fin.	19	320	25	931	19	839	90.1
<u>Leather Industries</u>		(5,261)					
37 Harness & Saddle	7	162	12	276	12	276	100.0
38 Leather Belt, Leather goods, etc.	10	1,041	13	308	13	308	100.0
39 Shoe Factories	7	1,747	10	2,348	8	2,170	92.4
40 Tanneries	6	295	2	112	2	112	100.0
41 Trunk, Suit Case & Bag	8	223	2	59	2	59	100.0
<u>Lumber & Furniture Ind.</u>		(30,662)					
42 Furniture Factories	199	20,709	167	16,458	115	10,442	63.4
42A Caskets	22	778	28	1,044	20	793	76.0
43 Piano & Organ	5	569	5	289	5	289	100.0
44 Saw & Planing Mills	179	3,803	90	1,715	57	1,094	63.8
45 Other Woodworking	299	6,248	113	5,254	74	3,245	61.8

INDUSTRIES IN INDIANA - CLASSIFIED

Symbol Industry	1930 Census		Industrial File		Sample For		Survey
	Plants	Emp.	Plants	Emp.	Plants	Emp.	% plt.
<u>Paper Printing & Allied Ind.</u>	724	(16,822) 18,404	347	17,059	248	12,077	70.8
46 Blank Book Envelope, Paper Bag, etc.	21	1,007	29	2,327	22	1,502	64.5
46A Wallpaper	--	--	3	84	3	84	100.0
46B Waxpaper	--	--	3	46	3	46	100.0
47 Paper & Pulp Mills	24	2,372	12	928	10	666	71.8
48 Paper Box Factories	26	2,504	42	3,940	32	2,666	67.6
49 Printing, Publishing & Engraving	282	5,108	147	3,971	93	2,373	59.9
49A Book Binding	13	136	10	691	10	691	100.0
49B Engraving & Dev.	20	563	27	657	23	578	88.0
49C Lithographing	--	--	7	373	7	373	100.0
49D Newspaper	331	6,587	67	4,042	45	3,093	76.5
49E Stereotype	7	147	--	--	--	--	----
		(10,386)					
<u>Textile Industries</u>	58	8,634	86	10,351	70	8,266	72.6
5V Cotton Mills	3	722	3	557	3	357	100.0
50 Knitting Mills	11	6,506	8	6,366	5	4,853	76.2
51 Silk Mills	--	--	1	75	1	75	100.0
52 Textile Dyeing, Finishing Printing Mills	--	--	5	756	5	756	100.0
53 Woolen & Worsted Mills	7	697	10	967	8	952	98.4
55 Hemp, Jute & Linen Mills	--	--	3	123	3	123	100.0
56 Lace & Embroidery Mills	--	--	1	10	1	10	100.0
58 Sail Awning & Tent	21	269	26	385	22	245	63.6
59 Other & Not Specified Textile Mills	16	440	29	1,112	22	695	62.5
<u>Miscellaneous Mfg. Ind.</u>	182	30,974	226	30,240	176	18,606	61.5
60 Broom & Brush	19	568	14	381	11	305	80.0
61 Button Factories	5	198	6	136	6	136	100.0
62A Batteries	--	--	8	1,160	6	1,140	98.2
62B Lamps	14	2,163	2	289	2	289	100.0
63 Elec. Mac. & Supply	62	24,375	69	18,911	46	9,336	49.4
64 Independent Hand Trades	--	--	3	30	3	30	100.0
65 Rubber Factories	11	1,463	27	5,003	21	3,450	68.9
66 Straw Factories	--	--	1	253	1	253	100.0
68 Other Miscellaneous	5	51	33	968	25	703	72.6
68A Signs	25	425	17	378	14	343	90.7
68D Toys & Novelties	13	850	7	333	7	333	100.0
68E Hair Goods, Artificial Flowers	--	--	4	268	4	268	100.0
68F Mirrors Lenses	11	453	19	608	14	498	81.9
68G Lamp & Window Shades	12	175	8	164	8	164	100.0
68H Other Not Specified	6	255	4	80	4	80	100.0
71 Bridge & Bridge Constr.	--	--	4	1,278	4	1,278	100.0

INDUSTRIES IN INDIANA - CLASSIFIED

Symbol Industry	1930 Census		Industrial File		Sample For		Survey
	Plants	Emp.	Plants	Emp.	Plants	Emp.	% plt.
		(9,748)					
Personal Service	--	--	195	5,879	132	3,989	67.8
97 Laundries	--	--	121	4,372	83	3,019	69.0
98 Cleaning, Dyeing and Pressing Shops	--	--	74	1,507	49	970	64.4
		(440,515)					
Mfg. & Mech.	--	--	3,501	366,635	2,445	249,188	68.0
		(24,034)					
Extraction Minerals	452	18,279	116	9,894	78	6,990	70.6
		(9,748)					
Personal Services	--	--	195	5,879	132	3,989	67.8
GRAND TOTAL	--	--	3,812	382,408	2,655	260,167	68.0
		(474,297)					

PLANTS IN INDIANA BY COUNTIES

COUNTY	NO.*	NO.*	NO.		NO.	
	PLANTS CENSUS	EMPLOYED CENSUS	PLANTS OBTAINED		EMPLOYEES OBTAINED	
			Total	Sample	Total	Sample
Adams	33	1,280	33	21	2,153	1,696
Allen	164	15,015	240	164	24,995	12,007
Bartholomew	52	2,684	65	39	4,014	3,064
Benton	7	106	4	2	99	24
Blackford	23	1,413	23	18	1,513	1,424
Boone	20	358	17	13	852	369
Brown	2	5	--	--	--	--
Carroll	14	79	13	8	224	172
Cass	38	1,457	53	35	2,779	2,458
Clark	26	1,309	24	17	1,864	1,017
Clay	23	408	40	30	1,275	993
Clinton	23	1,160	17	13	1,107	832
Crawford	8	66	8	6	252	212
Davies	24	842	17	10	863	736
Dearborn	38	2,199	26	20	3,502	2,068
Decatur	17	284	17	11	484	331
DeKalb	24	842	23	19	1,279	937
Delaware	106	9,040	114	78	13,076	8,870
Dubois	63	1,651	63	42	2,619	1,798
Elkhart	140	6,423	155	112	9,555	8,000
Fayette	24	3,126	24	18	4,516	1,865
Floyd	51	2,477	36	24	2,809	1,623
Fountain	17	522	18	16	862	705
Franklin	2	5	7	1	155	5
Fulton	16	199	8	5	302	173

PLANTS IN INDIANA BY COUNTIES

COUNTY	NO. * PLANTS CENSUS	NO. * EMPLOYED CENSUS	NO. PLANTS OBTAINED		NO. EMPLOYEES OBTAINED	
			Total	Sample	Total	Sample
Gibson	23	782	22	10	1,257	846
Grant	81	5,906	77	51	8,024	4,728
Greene	20	425	23	17	1,123	802
Hamilton	22	555	23	11	1,206	694
Hancock	19	257	13	9	898	510
Harrison	14	446	7	5	451	369
Hendricks	7	53	1	1	7	7
Henry	45	4,226	41	32	6,701	5,877
Howard	48	4,672	67	44	10,262	7,007
Huntington	44	1,747	32	17	1,943	1,087
Jackson	43	2,238	39	30	2,597	1,898
Jasper	8	23	--	--	--	--
Jay	21	2,148	26	18	3,644	2,519
Jefferson	23	337	20	12	742	417
Jennings	13	316	7	6	255	245
Johnson	31	1,569	24	15	3,864	2,790
Knox	36	1,375	49	34	3,477	2,802
Kosciusko	33	712	33	12	1,381	1,100
LaGrange	5	95	9	5	140	71
Lake	221	47,884	214	156	66,186	45,065
LaPorte	90	5,446	87	65	8,926	7,336
Lawrence	28	1,394	32	21	2,320	2,076
Madison	119	14,324	166	114	20,204	10,593
Marion	736	36,828	454	325	49,523	39,350
Marshall	27	499	27	18	1,263	681
Martin	5	275	9	9	158	158
Miami	30	1,082	30	23	2,043	1,459
Monroe	41	1,843	55	35	3,063	1,378
Montgomery	31	1,119	44	28	1,856	1,016
Morgan	24	406	19	13	584	401
Newton	9	37	1	--	20	--
Noble	32	846	28	21	1,532	1,014
Ohio	2	5	1	1	25	25
Orange	14	333	9	6	337	223
Owen	7	179	11	8	262	228
Parke	9	34	7	4	185	85
Perry	28	1,389	21	16	1,757	1,340
Pike	9	34	2	2	120	120
Porter	26	592	15	15	840	840
Posey	17	650	12	8	631	563
Pulaski	9	76	3	2	110	105
Putnam	10	415	9	8	494	471
Randolph	28	1,510	32	23	2,605	2,000
Ripley	26	823	15	10	1,321	819
Rush	22	482	19	11	1,540	1,008

PLANTS IN INDIANA BY COUNTIES

	NO.* PLANTS CENSUS	NO.* EMPLOYED CENSUS	NO. PLANTS OBTAINED		NO. EMPLOYEES OBTAINED	
			Total	Sample	Total	Sample
Scott	7	1,514	2	4	1,450	1,590
Shelby	38	1,572	35	22	2,796	1,811
Spencer	15	94	11	8	493	280
Starke	6	166	3	2	66	56
Steuben	17	115	8	7	106	99
St. Joseph	179	20,873	203	141	24,434	16,293
Sullivan	11	105	17	11	1,389	801
Switzerland	4	16	1	1	7	7
Tippecanoe	57	2,068	36	25	4,951	3,924
Tipton	26	704	21	13	1,396	931
Union	5	41	2	2	72	72
Vanderburgh	181	13,221	240	175	20,686	12,496
Vermillion	14	366	23	15	1,771	1,317
Vigo	108	5,853	142	99	9,715	6,188
Wabash	41	1,168	40	30	2,563	1,700
Warren	1	5	--	--	--	--
Warrick	14	195	14	11	525	382
Washington	19	408	14	10	928	821
Wayne	88	4,616	85	57	7,469	6,034
Wells	14	156	12	8	341	264
White	13	618	7	1	767	630
Whitley	15	879	12	9	1,054	335
TOTAL	3,964	254,113	3,813	2,642	380,010	259,573

*Biennial Census: 1935
Bureau Census

C O P Y

STATE OF COLORADO
DIVISION OF PUBLIC HEALTH

State Office Building, Denver

The State Board of Health is conducting a survey of industries in Colorado. The objective of the present study is to obtain general information concerning conditions of environment associated with the various occupations which potentially may have an effect on the health of the workers. Such facts are needed to appraise the occupational disease problem. It is hoped that this study will yield valuable data for the constructive development of a permanent industrial health service in Colorado. This information will be used only for the purpose stated and will be treated in such a confidential manner that no individual plant findings will be revealed.

Time does not permit the study of each and every plant; hence we have selected a random sample of the various industries to be studied and your establishment was selected without consideration of whether we might find the occupational environment poor, average or good.

A properly identified representative of the State Board of Health will call on you within the next week or ten days to obtain the desired information. It will be very helpful if you could assign someone for the purpose of giving him the data needed and to accompany him throughout the plant.

Your kind cooperation will be greatly appreciated.

Very truly yours,

R. L. CLEERE, M.D.

Secretary and Executive Officer
Colorado State Board of Health

RLC:hmn



COLORADO
STATE BOARD OF HEALTH

State-wide Industrial Hygiene Survey

FIELD SURVEYORS MANUAL

R. L. Cleore, M.D., C.P.H.
Secretary and Executive Officer

May 1938

STATE-WIDE INDUSTRIAL HYGIENE SURVEY

The State-wide Industrial Hygiene Survey in Colorado is being conducted by the State Board of Health. The objectives of this survey of industrial establishments are fourfold:

1. It will furnish an opportunity to become thoroughly acquainted with industries in Colorado.
2. It will enable us to evaluate the potential health hazards associated with a wide variety of occupations which will yield information needed in laying a basis for the constructive development of industrial hygiene.
3. It will enable the State Board of Health to better assist industry in solving and controlling their industrial health problems.
4. It will provide a valuable source of information for State departments, for medical interests, or any other agencies interested in industrial hygiene.

To achieve the objectives of this study, Forms 3, 3-A, and 4 have been evolved for recording the data necessary to obtain a comprehensive conception of the problem as it exists in a given locality.

The success of this study depends upon the accuracy and thoroughness with which you fill out these forms. The reverse sides of these forms may be used to supplement or describe more thoroughly, the processes viewed or other conditions. It would be well to briefly describe the production operations, in sequence, from the raw material stage to the finished product for each plant surveyed.

Bear in mind that this information cannot be interpreted as indicating in any manner whatsoever that an exposure to an industrial condition or material necessarily implies injury to a workman, BUT MERELY INDICATES THE POTENTIALITIES OF THE SITUATION.

We are not detecting industrial health hazards. Health hazards can only be ascertained by medical, engineering and chemical determinations interpreted by a trained industrial hygienist. We are not inspecting plants but are engaged in a survey to gather information concerning the conditions of environment associated with the various occupations in Colorado industries. To this end, we are seeking the cooperations of industries. Therefore, it would be wise to omit the words "inspection" and "hazards" in any discussion that you may have with plant officials or others.

B-2637

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State-Wide Industrial Hygiene Survey, cont.

Refrain from giving personal opinions on industrial hygiene conditions, as such opinions, if inaccurate, will impair the reputation of the State Board of Health and reflect upon your work. Simply inform interrogators that opinions can only be given after exact determinations and not by the type of study we are conducting.

A correct attitude of each field worker toward the survey and the various individuals with whom he may come in contact is very important. As repeated above, the survey is for the collection of specific data and the surveyor is not in position to form and express opinions as to the importance of exposure found nor the probable effects upon workers. An investigator must maintain an open and unbiased mind. It is important to obtain full information concerning favorable as well as unfavorable conditions. Also, his attitude toward plant officials must be such as to encourage cooperation and never imply criticism. In approaching officials of a particular plant, the workers should assume that cooperation in the study has already been cleared by letters from the central office and that he will encounter no objections. If there should be objections, he should try to explain as diplomatically as possible the reasons for the survey and that the data will be considered in a general way only. Also he should point out that only the environmental conditions and potentialities and not the extent or magnitude of actual hazards are to be determined. He should remember that the cooperation of a particular plant official is entirely voluntary, and there is no cause for irritation if in an extreme case the surveyor should be refused entry to the plant or the information requested. In such a case he should courteously leave the plant until further negotiations can be made.

It is only natural that some plant officials may inquire the purpose of the survey and of the general industrial hygiene program. General information is included in this manual and each worker is encouraged to inform himself in order that he may give intelligent replies to such questions and obtain the confidence of plant officials. However, he should not attempt to be too specific, but for details should refer the inquirer to the office of the State Board of Health.

A diplomatic method of approach and of making the first contact with the designated plant official or someone authorized by him to give the information are unfailing rules. The success of each worker will depend upon his methods of approach. No entry or inspection of a plant should be made until the proper official is contacted, even though it is necessary to wait some time or perhaps leave and return at a later hour. Moreover, discussion of the purpose of the visit with other workers with whom he may have casual contact while waiting, may lead to trouble and should be avoided.

State-Wide Industrial Hygiene Survey, cont.

In some cases workers may be approached by individual acquaintances or perhaps by newspaper representatives who will request information or statements relative to the survey and the industrial hygiene program. Too much talk can lead to serious misunderstandings and criticism of the activity of the State Board of Health. In no case should interviews with newspaper reporters or any statements to be published in the papers be given. For example, each worker should avoid the following:

1. Any statement which involves the policy of the State Board of Health.
2. Any statement, general or specific, relative to conditions found or thought to exist in various industrial plants of the vicinity, or of the State.
3. Criticisms or discussion of individuals with whom the worker has come in contact in the course of his work.
4. Discussions or contacts with laborers or their representatives concerning plant conditions or findings. It is, of course, permissible to outline the general objectives of the survey to such persons in the same manner as to industrial officials, but this should be done only upon inquiry.

The above are merely examples which indicate the possibilities of getting into trouble by talking too freely. A diplomatic person can ward off the most specific question without giving out information which it is desirable to withhold and without offending the questioner.

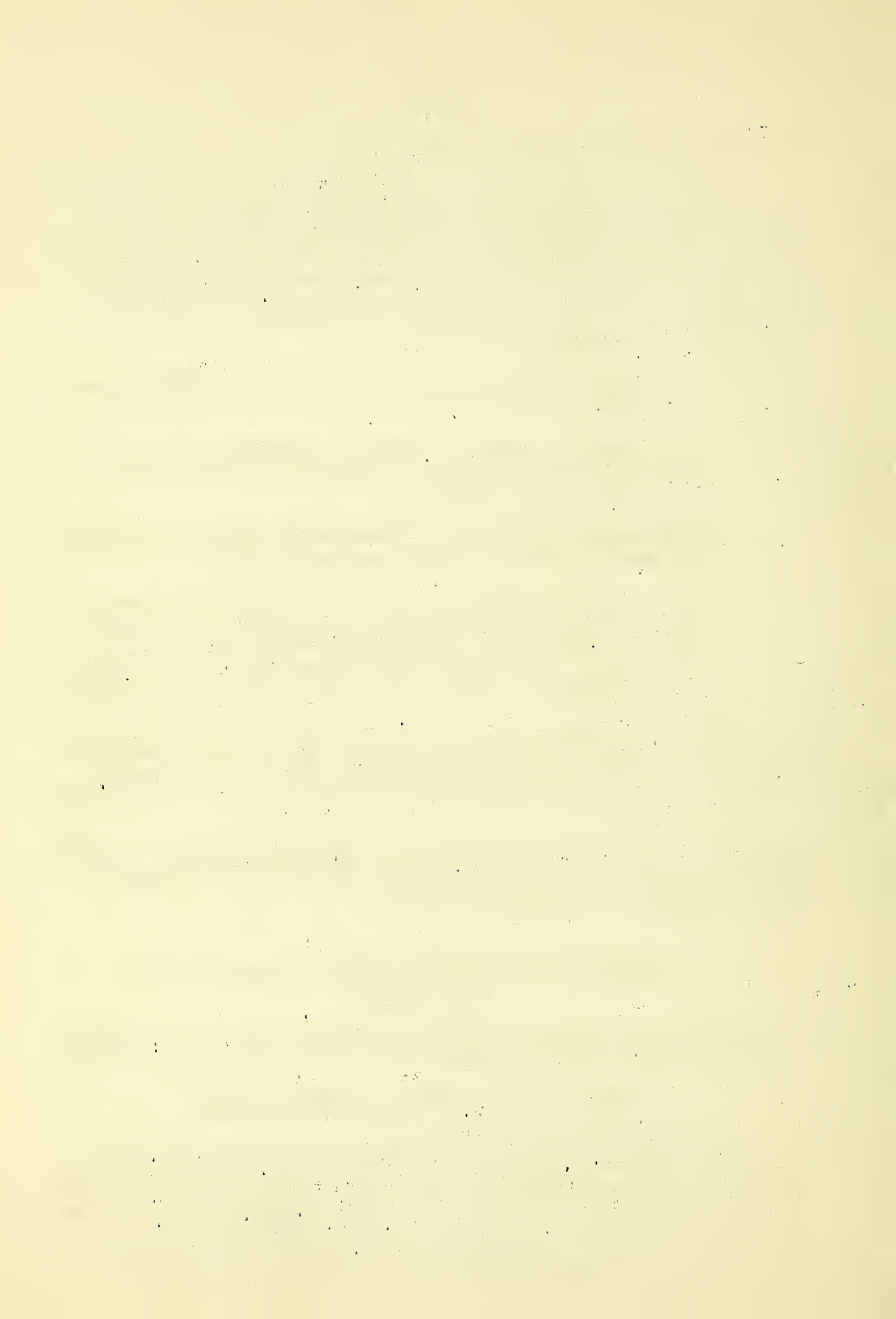
Do not allow yourself to get away from the proposition that this is a fact finding inquiry relating to the aggregate industrial health in establishments of similar kinds and that INDIVIDUAL PLANTS will not be mentioned in the report as such.

SPECIFIC INSTRUCTIONS FOR MAKING ENTRIES ON PLANT
SURVEY FORMS

To facilitate filling out the plant survey forms, the following definitions for the various headings in these forms are given below:

FORM NO. 3 -- INDUSTRIAL HEALTH SERVICES

The industrial health service form, a sample copy of which is included in this manual, is for the purpose of identifying the plant, recording safety and medical provisions which are afforded, and determining the presence of records. It is taken for granted that the entire number of employees is subject to these provisions, and, if not, this should be clearly explained in the remarks. For this reason, only one of these forms is required for each plant.



Name of Plant Industry Code and No. Date
 County City Location
 Plant Owner Address No. Employees
 Plant Official Title M
 F
 T

SAFETY PROVISIONS		MEDICAL PROVISIONS		BENEFITS AND RECORDS		
Safety Full time <u> </u> Director: Part time <u> </u> None <u> </u>	Hospital: Company <u> </u> Contract <u> </u> None <u> </u>	Physician: Full time <u> </u> Part time <u> </u> On call <u> </u> None <u> </u>	Sick Benefit <u> </u> Yes <u> </u> Organization: <u> </u> No <u> </u>	Snap Yes <u> </u> Committee: No <u> </u>	Nurse: Full time <u> </u> Part time <u> </u> None <u> </u>	Sickness Records: <u> </u> Yes <u> </u> No <u> </u> Waiting period <u> </u>
Insurance Yes <u> </u> Service: No <u> </u>	First aid Yes <u> </u> Room: No <u> </u>	P.H. <u> </u> R.N. <u> </u> Other <u> </u>	Accident Records: <u> </u> Yes <u> </u> No <u> </u>	Other: Yes <u> </u> No <u> </u>	Trained First Aid Worker: Yes <u> </u> No <u> </u>	Seasonal: <u> </u> Operating period: <u> </u>
Remarks: <u> </u>	Remarks: <u> </u>	Remarks: <u> </u>	Remarks: <u> </u>	Remarks: <u> </u>	Remarks: <u> </u>	Remarks: <u> </u>

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State-Wide Industrial Hygiene Survey, cont,

The form is designed with five lines at the top where information should be written in, and three blocks of information; namely, "Safety Provisions," "Medical Provisions," and "Benefits and Records." In these three blocks the information is recorded by placing a check mark in the blank which applies under each sub-heading. Remarks which apply to a particular item should be properly identified. Please write plainly (all printing or writing should be legible). The various items on the Industrial Health Service data form will be explained briefly as follows:

Page -- Form No. 3 will always be page 1 of the total number of sheets used.

Surveyed by -- Record your signature.

Name of Plant -- Full name of plant.

Industry Code and Number -- Leave this space blank.

Date -- The date when this form was completed and recorded. Enter date in a uniform manner using the number of the month first, followed by the day and year; for example, 4/20/38 for April 20, 1938.

County -- Self-explanatory.

City -- This refers to the incorporated town or city within the limits of which a plant is located, or give the post-office address.

Location -- The purpose of this blank is to enable another worker to find the plant again easily, and also to determine whether it is inside or outside the town given as the address. If within the limits of the town, give the address; e.g., "192 Main Street." If the location is difficult to find, explain the location; e.g., "Northwest side of town," "Near Lake Street Bridge," etc. If a plant is outside the town, its location should be referred to landmarks which are easily identified; e.g., " $\frac{1}{2}$ mile east of Highway 67 and 2 miles north of town."

Owner of Plant and Address -- Give the name and address of the individual, firm, or corporation owning the plant regardless of whether the address is nearby or in another state.

Plant Official -- Refers to the person in charge of the plant who may be found there most of the time and who would regularly receive mail addressed to him at the plant.

Title -- Self-explanatory.

Products Manufactured or Service -- On the Industrial Health Service data sheet state briefly the articles made by the firm at this plant; e.g., "gray iron castings for pumps, car wheels," placing them in order of importance to manufacturer. If the company is a service industry, name the type of service, as "laundry."

State-Wide Industrial Hygiene Survey, cont.

Number of Employees -- Male, Female and Total -- To be entered after completion of survey at plant from totals on Forms 4. Show the total number of employees as determined from the workroom survey forms, with the number of males and females comprising this group.

Full Time -- By "full-time" is meant that a person spends more than one-half of his work day every day in the specified activity while the plant is in operation. This applies to safety director, physician and nurse, below.

Safety Director -- A person of special training or ability acquired from experience, who is employed or designated from the plant personnel, to study and improve conditions for the prevention of accidents.

Shop Committee -- Committees made up of employees from the various departments or from the plant at large designated to have certain responsibilities for accident prevention.

Insurance Service -- Applies to the use of safety service rendered by an insurance company: such as posters, periodic inspections, etc.

Other -- Any other special provisions or arrangements designed to prevent accidents, such as membership in National Safety Council.

Medical Provisions

Hospital -- May be company owned, located at, or convenient to the plant. A hospital is defined as a place located on the company grounds where the patient may be kept overnight or for duration of illness with adequate medical attention. "Contract" is a definite agreement between the plant and a hospital for care of its employees. If neither is available, none should be checked.

First Aid Room -- A room set aside and equipped for this and no other purpose.

First Aid Kit -- An adequate first aid kit should contain all items necessary in rendering first aid in cases of accident or sudden illness.

Trained First Aid Worker -- May or may not refer to a full-time worker depending upon the size of the plant, but does mean a certified first aid worker who is always present in the plant and available to render this service while the plant is in operation.

Physician -- Refers to a full-time or part-time physician employed or retained by the company officials to render medical service in case of accident or illness of employees, conduct physical examinations and carry out other medical service. "On call," a definite contract between the company and a physician, who comes to the plant when called.

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Page 6.

State-Wide Industrial Hygiene Survey, cont.

Nurse -- To render nursing service on a full-time or part-time basis.

"P.H." refers to a public health nurse -- a registered nurse with public health training.

"R.N." refers to a registered nurse.

Remarks -- Apply to any of the three blocks of information: namely, safety provisions, medical provisions, or benefits and records, and should be placed in the respective blanks, if possible, but in all cases refer remarks to proper items by use of similar symbols.

Benefits and Records

Sick Benefit Organization -- A fund or insurance maintained by either employers or employees, or both, to provide payments to employees during periods of disability from sickness or non-industrial accidents. If carried by an insurance company, state under remarks where records are kept.

Sickness Records -- State whether the company maintains such records for each case of disability through sickness, and how long a period of absence or waiting period must elapse before sickness records are made.

Accident Record -- State if records for lost time due to accidents are kept.

Seasonal -- Fill this space only if plant is seasonal, and enter approximate dates of operations.

Name of Plant _____ Industry Code and No. _____ Date _____

County _____ City _____ Location _____
 Informant _____

VENEREAL DISEASE INFORMATION

Serological Tests (Wasserman, etc.) on applicant: Yes _____ No _____
 Positive Cases (Non-infectious) accepted Yes _____ No _____
 Serological Tests on employees: Yes _____ Annually _____
 No _____ 6 months _____
 Other _____

Disposition: a. Treated at plant _____
 b. Referred _____
 Family Physician _____
 Clinic _____
 c. Discharged _____
 D. Ignored _____

Would you be willing to cooperate with the State Board of Health in a Venereal Disease prevention program? _____

Immunization Program against Contagious Diseases at present time? Yes _____ No _____

Remarks: _____

SANITARY FACILITIES

Water Supply	Drinking	Washing	Toilet	Sewerage System	Remarks:
Municipal	Other	Laboratories	Flush	Treatment plant	Ind. Locker
Well	Individual cup	Other	Bit privy	Discharge	
Stream	Common cup	Laboratories	Other	Stream	Sep. Lunch room
Chlorinated	Individual cup	Other	Other	Lagoon	
Sattled	Common cup	Other towel	Other	Lake	Other
Filtered	Other	Other towel	Other	Other	

Check in blank which applies

FORM NO. 3-A -- INDUSTRIAL HEALTH SERVICES (continued)

This form is a continuation of Form 3 and it is necessary to fill out one form for a plant.

Heading: Definition of entries same as on Form 3 except Form 3-A will always be page 2 of total number of pages.

VENEREAL DISEASE INFORMATION

Place a check mark (✓) in blank which applies.

Serological Tests (Wasserman, etc.) on applicant: Show whether a serological test is required or taken on each applicant for a position. If only for certain positions, state for which positions under remarks.

Positive Cases (Non-infectious cases) accepted: Do not fill in if test is not required on applicant for a position.

Serological Test on employees: Check if done at any time. If done at any other time than annually or semi-annually, check other and explain under remarks.

Disposition: Self-explanatory. Applies to employees only.

Would you be willing to cooperate with the State Board of Health in a Venereal Disease prevention program?

This specifies:

1. The examination of blood for syphilis as part of a routine physical examination at time of application for employment.
2. A periodic examination of employees for venereal diseases.
3. Provision for adequate treatment and follow-up either by private physician, clinic or company doctor.
4. An educational program as regards venereal diseases.

Immunization Program: Inquiry should be made concerning provisions made for immunization against smallpox, typhoid fever, Rocky Mountain spotted fever, or any other disease.

SANITARY FACILITIES

Place check mark in each column if facility is provided using plus sign (+) to note presence of facility and minus sign (-) to denote absence. Whenever "other" is checked plus (+), it may be necessary to explain under remarks.

Under Water Supply and Sewerage system, if only the municipal supply or system is used, the other entries under the headings will be checked with a minus sign. It is only necessary to show treatment of water supply or place of discharge of sewerage when a private water supply and sewerage treatment plant are used.

COLORADO INDUSTRIAL HYGIENE SURVEY
WORK ROOM SURVEY DATA

Name of Plant _____

Location _____

Industry Code and No. _____

Department _____

Work Room _____

Informants Name _____

Surveyed by _____

Date _____

Occupation	Number of Persons			Nature of Job	General Ventilation		Control Measures	Material Code
	M	F	T		Positive	Negative		
				Raw Materials and By-Products			Local Exhaust Enclosure Wet Method Gas Mask Respirator Air Line Resp. Prot. Clothing Other	
Total								

Fountain -- Any type of bubble fountain. If, however, an approved type is noted, place "A" in column instead of the usual check mark.

Individual cup. Self-explanatory.

Common cup. Self-explanatory.

Lavatory -- Check if adequately equipped lavatories are furnished which are used for washing facilities only and not used for any industrial process.

Other -- Washing facilities provided but not adequate, or not confined entirely to washing (hands).

Common towel -- Signifies common towel or towel used by more than one person.

Other towel -- Individual towels, paper or cloth provided for single service.

Showers -- Showers provided.

Toilet Facilities -- Indicate type installed and at top of the column note number.

Flush -- Flush toilet.

Pit Privy -- Indicate by "A" if approved type of pit privy; otherwise enter plus (+) if unapproved type.

Other -- Any other type provided.

Sep. lunch room -- A lunch room entirely separated from work rooms and lockers.

Ind. locker -- Individual lockers.

FORM NO. 4 -- WORK ROOM DATA

Page _____ of _____. Note page number of total number of pages.

Name of Plant -- A similar record should be made for this item as indicated on Form 3.

Location -- Give the address of the plant at which the survey is made, e.g., 1500 Sherman Street, Denver, Colorado.

Industrial Code and Number -- Leave blank.

Department -- Record the name of the department as "pasting," "mixing," etc. Make a separate sheet for each department in a workroom unless there are only one or two occupations in the department. Where two or more departments are located in one workroom, show location by sketch on back of sheet.

Workroom -- A workroom is defined as a room entirely enclosed. If a department occupies two or more workrooms, separate sheets should be used for each workroom. Workrooms in a plant should be numbered consecutively for plant as 1, 2, 3, etc.

Page 9.

Informant's Name -- Record name of person supplying information, given names may be initialed, as J. A. Smith, but never be less specific. List on first workroom form only if informant is the same in all workrooms.

Surveyed by -- Use your initials or name on workroom forms.

Date -- Record date each workroom is surveyed.

OCCUPATIONAL INFORMATION

Occupation -- List the names of the occupations, using as many sheets as necessary. If a specific occupation is known by more than one name, list these names directly under the one most commonly used, and bracket the synonymous names. If impossible to keep sequence of occupational processes in order, show flow diagram on back of sheet.

Number of Persons -- Record, by sex and total, the average monthly number of employees engaging in the occupation designated. Do not classify any worker under more than one occupation. There is space for recording five occupations and related information. When the number of employees in a department or workroom has been enumerated on these records enter the total in the proper place, at the bottom of columns 2, 3, and 4. Record only workers engaged in occupations within the plant proper. Exclude salesmen, etc., but include all others occasionally exposed to the workroom environment, such as supervisors, chemists, truck drivers, etc. Group all of the occupations in the office force together. Do not be afraid to use more than one space for one occupation if necessary.

Nature of Job -- Record briefly, but with sufficient clarity, duties associated with the occupation (example: occupation -- weighers, nature of job -- weighs asbestos and cotton materials on hand scale).

Raw Materials and By-Products -- List all the materials associated with the occupation. When possible, give both trade name and manufacturer of each raw material. In instances where the plant officials are unaware of the exact compounds in certain materials, be satisfied with noting the trade name of the material or the number assigned to a specific material by certain manufacturers. Do not use chemical symbols alone. Do not use ditto marks. Do not include tools which are not subject to disintegration during process. Quite often certain by-products in an occupation or process are evolved which in themselves are potentially hazardous in nature. For example, in the making of paper pulp from wood by certain chemical processes, sulphur dioxide gas, hydrogen sulphide gas and organic sulphuretted compounds are evolved as by-products. Record all such data. Oftentimes there may be an exposure to a material from another department or process; in such cases, this material should be included with an asterisk, and a footnote "contributory source."

General Ventilation -- This applies to ventilation provisions common to the entire workroom. Place a small "+" or "-" sign in each of the two small squares under this heading to signify whether or not these two methods of general ventilation are in existence. These squares are located above the column heading marked "raw materials and by-products."

- A. Positive ventilation refers to supply type in which air is forced into the room. At least part of this air must be fresh air from an outside source.
- B. Negative: Negative ventilation refers to exhaust methods of removing air from a room.

Control Measures -- This column is to be filled out for all occupations in which there is an exposure to dust, fumes, vapors, mists, gases, or other conditions requiring control and types of control measures should be indicated (plus sign for "yes" and minus sign for "no"). Each and every small square must be filled in with either a "+" or "-" sign which will signify whether or not that particular control measure is in use. Indicate for which materials or by-products the control is used. The control measures shown on the record refer specifically to the occupation in question. Space and time will not permit complete records of all control measures used or needed. The ones provided usually will be sufficient; however, other important observations may be recorded under "remarks," on the reverse side of the sheet.

- A. Local Exhaust: This type of ventilation refers to provisions for ventilating a particular section of the workroom, for example, an exhaust system attached to tool grinders, etc., and should not be confused with general exhaust which serves the entire workroom. One room may be equipped with a general and several local exhaust systems.
- B. Enclosure: This refers to control measures consisting of process in a total enclosure; for example, sandblasting cabinets which are relatively small box-like enclosures in which the process is controlled through openings that admit tools or hands of the operators into the cabinet. The objective is to protect the operators and other workers in the environment against the hazards of the process.
- C. Wet Methods: Refers to the use of water or other liquids as in rock drilling or hydraulic knockouts, for the purpose of allaying dusts, created in certain processes. If a wet process has been substituted for a dry process, note this fact.
- D. Personal Respiratory Protection: Record whether gas masks, respirators or air line respirators are used. In the case gas masks and respirators are in use, note whether they are types approved by the U. S. Bureau of Mines. If approved, the official government seal and name of the Bureau will be stamped on the equipment.

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- E. Protective Clothings: Note use of goggles, aprons, gloves, rubber boots, etc.
- F. Others: Refers to any type of control measures not listed on the form, i.e., skin protecting agents such as vaseline, "Protecto," "Nu-skin," talc, etc. Any pertinent observations concerning such measures may be recorded under "remarks."

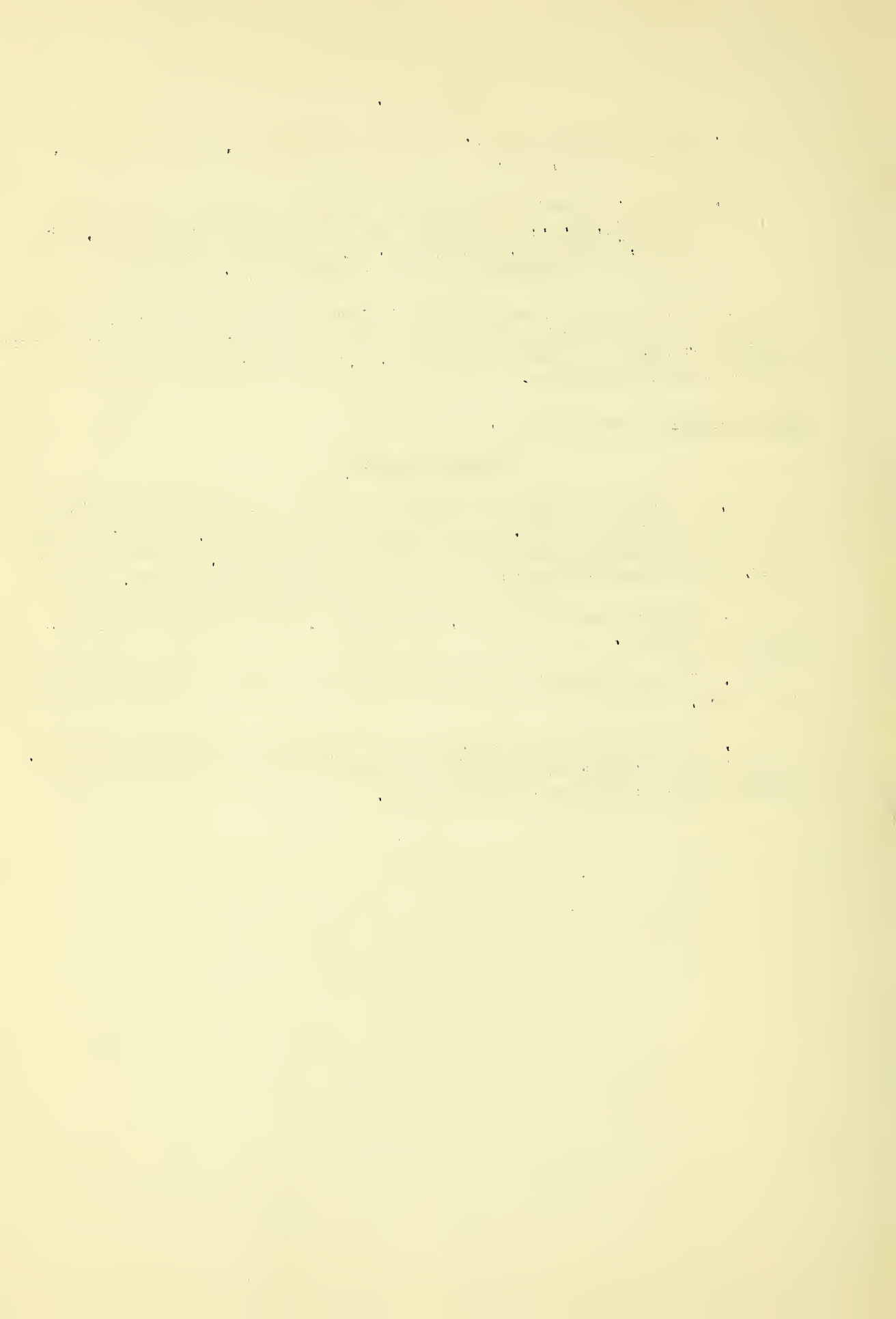
In the rectangular space directly below the small squares, indicate for which materials or by-products the control is used and what constitutes the "other" control measures when used. It may be necessary to use the reverse side of the sheet.

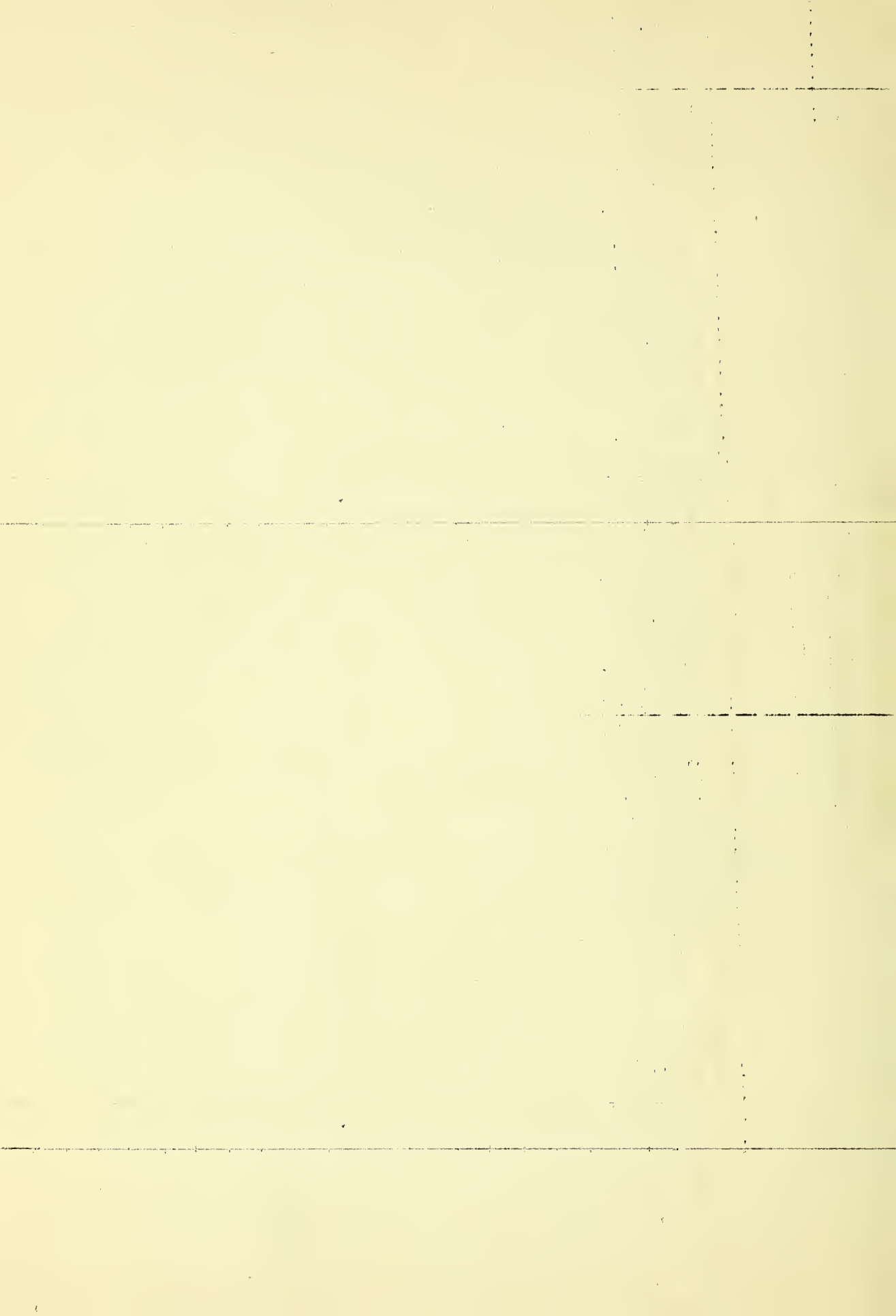
Material Code -- Leave blank.

GENERAL COMMENTS

1. Describe the nature of each occupation as briefly as possible but describe it completely. Keep sequence of operation. In going through the plant originally it may not be possible to do this, but when copying forms, place departments and occupations in order of operation.
2. List all raw materials, by-products, and materials from contributory sources.
3. List all methods of control but do not attempt to judge their efficiency.
4. Please submit two copies of each survey to the central office. You will find it necessary to copy the data collected in the plant and a carbon copy can be made at this time.

- - -





COLORADO INDUSTRIAL HYGIENE SURVEY
Material Exposure, by Occupation, in Each Industry

Material Exposure

Page

Industry Code

Name of Industry

Number of Persons Exposed, Classified by Plants

Plant Number

Population

Occupation

C

Tot. All
Plants

Total

%

C Population brought forward

Colorado State Board of Health, Division of Industrial Hygiene

%

ORGANIZATION OF INDIANA INDUSTRIAL HYGIENE SURVEY

U.S.P.H.S.
Division of Industrial Hygiene

STATE BOARD OF HEALTH
Dr. Verne K. Harvey

STATE DIVISION OF LABOR
Thomas R. Hutson

BUREAU OF INDUSTRIAL HYGIENE
Dr. Louis W. Spolyar

FIELD SUPERVISOR
John S. Wiley

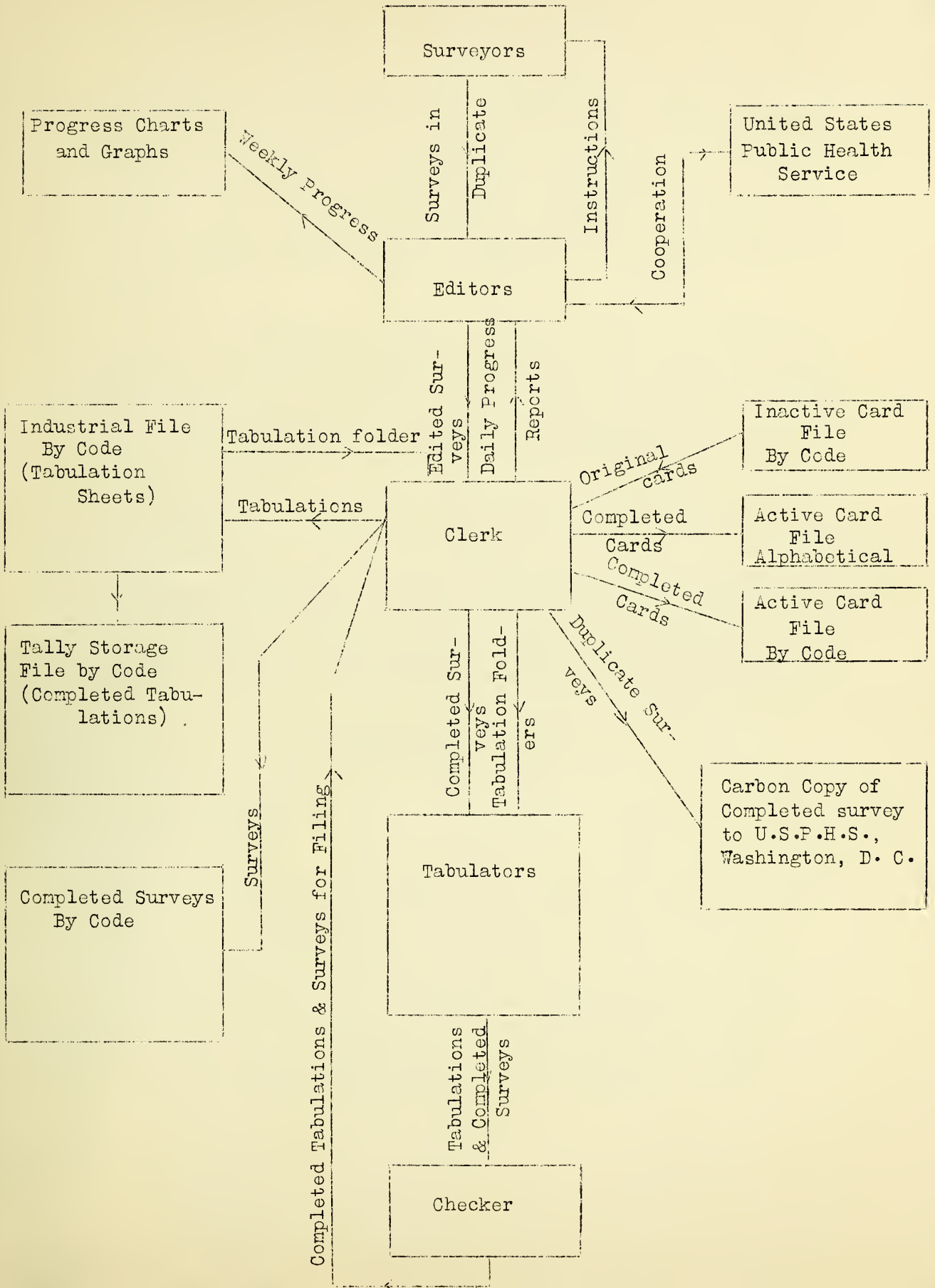
EDITOR & OFFICE SUPERVISOR
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A. E. Hollenbeck C. A. Reichelderfer

4 STENO-TABULATORS
Miss Cook Mrs. Wilson
Mrs. Richter Miss Reams

FLOW SHEET FOR INDUSTRIAL HYGIENE SURVEY
 Indiana State Board of Health



SEQUENCE OF OPERATIONS IN SURVEY OFFICE

After the control cards have been selected for the companies to be surveyed, all pertinent data are placed on these cards. Control cards should be given to a stenographer about two weeks before the plant survey is scheduled so that she can send out introductory letters. A 3-copy list of all companies receiving letters should be prepared by the stenographer (Form A). Two copies of this list should be given to the field supervisor, who in turn assigns each plant to a surveyor and notes this assignment in the columns marked "Engineer (Surveyor)" and "Date survey assigned".

As the surveys are brought into the office by the surveyors, or mailed in, they are placed in the file box on the field supervisor's desk. The field supervisor checks off the survey returned on the original list. These lists are kept in order by surveyor's name. The field supervisor records the number of surveys returned daily, the total number returned by surveyors weekly, number assigned, surveyed, refused, etc. (Forms B, C & D).

Determine if industries have a seasonal operating period and see that they are surveyed in season.

The field supervisor checks over surveys for consistency, omissions, etc., and then places them in the file box on the editor's desk. The editor edits and codes each survey, and as he codes a plant in an industrial classification, he places a tally mark beside that classification on the tally sheet.

The material exposure in red (List E)
Control in blue (List F)

The editor places the edited surveys in a file box, marked "edited surveys".

FIRST TABULATOR: The first tabulator takes these surveys, prints the code number on each sheet, copies editing and any additions made to the original sheet on the duplicate, and checks total number of employees on Form 3 by adding numbers from forms 4 on adding machine, and attaches the tape to the survey. Then he separates original forms from duplicates and places original surveys in file box on stenographer's desk and files duplicate copy in order of code number. He may also assist third tabulator with Forms 7 and 9. As soon as originals and duplicates are separated, each complete survey and copy should be stapled.

STENOGRAPHER: The stenographer places control cards of companies which have had letters sent to them in alphabetical order in file box on her desk. When edited surveys are placed on her desk by first tabulator, she attaches control card to survey form. She checks data on card for:

- A. Product manufactured or service
- B. Name and address of plant
- C. Name of surveyor
- D. Enters date for date coded or edited
- E. Enters population figure for males, females and total

The stenographer adds code number to this card, and makes up a duplicate card showing:

Product manufactured	Code number
Name of plant	Population figures
Address	Plant official or owner
Surveyor assigned	If no sickness record then note
Dates	Also waiting periods
	Note when kept by insurance company

These cards are filed immediately in file headed "SURVEYS COMPLETED--ALPHABETICAL". The surveys are placed in file box No. 2 on her desk.

The stenographer keeps a daily record of progress:

- A. Letters sent out
- B. Number of surveys returned (this information from field supervisor)
- C. Number of surveys for which duplicate card was made (number edited)
- D. Number of surveys tabulated (finished control cards returned by third tabulator)
- E. Number of plants refused, out of business, too small.

She files control card in file marked "SURVEYS COMPLETED BY INDUSTRY".

If this does not necessitate the stenographer's full time, she can help in making up Forms 7 and 9.

SECOND TABULATOR: The second tabulator takes the manila folders, containing the completed survey forms and tabulation sheets (which are filed together), from the file; checks the control card for code number and other data, and fills in forms, being responsible for Forms 5, 6 and 8. She also places the plant number and numbers of forms filled in with her initials on the outside of the manila folder. Enter the plant number in all forms, whether there is an exposure or not, to keep schedules uniform. Completion of forms should be noted on control card, with date and initials.

THIRD TABULATOR: Fills in Forms 7 and 9, and is responsible for the same. When filling in Form 7:

Number pages according to the plan on pages 81 and 82 of Bulletin No. 236.

Total exposures by plant and check this total against the exposures on Form 6. If not the same, check again, and then ask second tabulator to check her figures to see where the mistake may be.

Keep sequence of occupations the same on page 1-A as on 1, 2-A as on 2, etc.

Insert the plant number and total population even though there is no exposure present.

Keep track of similar occupations using different or slightly different names. Place synonymous names in parenthesis over original entry and insert any other synonymous names on the back of the form, identifying by number. Occupations having the same name in different departments of the same plant will be classified together, only if duties are similar. Otherwise, specify department. Example: Foreman - foundry; foreman - carpenter shop.

Keep forms in alphabetical order.

When filling in Form 9:

Make up a Form 9 for each Form 7. Enter plant number and population exposed from Form 7. If none, note same. When there are no control measures, place 0 or check mark under each entry. This is a check for omissions. When there is no exposure, there can be no controls. Then enter a dash at the bottom under Total Persons or Exposures Controlled.

Note completion of each form on outside of manila folder, and with initials and date on control card. Remove control card to give to stenographer. Place folder on top of file cabinet when completed.

FOURTH TABULATOR: The fourth tabulator keeps library file up to date. Checks forms after completion and checks off on outside of folder, with date. (It may be best to check 2 or 3 companies in one folder at a time rather than singly.)

Keeps the industrial sheets up to date as a new industry is added and makes up new folders and guide cards as new numbers are added.

Makes note of industry name on manila folders by or under code number (to aid in finding industry). Files folders placed on top of file case by third tabulator.

GENERAL INSTRUCTIONS TO ALL TABULATORS - STENOGRAPHER: Everyone should be able to do each step if the necessity arises, but no matter which person does the transcribing, the person assigned above should be responsible for the accuracy of the step assigned to her. The surveys must not pile up at any particular point as it will delay the following steps. See that you are keeping the next person supplied with work.

E

<u>SYMBOL</u>	<u>MATERIAL</u>
Asb	Asbestos Dust
CDA	Coal Dust - Anthracite
CDB	Coal Dust - Bituminous
Sil	Silica Dust
Ate	Silicate Dust
NOS	Non-siliceous Dust
Org	Organic Dust
F1	Fluorides
CO	Carbon Monoxide
H2S	Hydrogen Sulphide
SO2	Sulphur Dioxide
OG	Other Gases
Cl	Chlorine
As	Arsenic
Cr	Chromium
Cd	Cadmium
Hg	Mercury
Mn	Manganese
Pb	Lead
Ra	Radium
Sb	Antimony
Se	Selenium
OM	Other metals
Lac	Lacquer and Varnishes
OS	Other Organic Solvents
Pet	Petroleum Products

<u>SYMBOL</u>	<u>MATERIAL</u>
Oil	Oil
Pnt	Paint
ACO	Acids, organic
ACM	Acids, mineral
Alk	Alkalies
Acce	Accelerators
Ald	Aldehydes
Ani	Aniline
Ams	Amines
Chm	Other chemicals
CTP	Coal Tar Products
CN	Cyanides
Dye	Dyes
Der	Other Dermatitis Producers
Hi	Hides
Inf	Infections
AEE	Alcohols, Esters and Ethers
Ink	Ink
Med	Medicinals
ETC	Extreme Temperature Changes
HH	High Humidity
P	Phosphorus
S'lt	Salt
S	Sulphur
Ben	Benzol
HIH	Halogenated Hydrocarbons

INDIANA BUREAU OF INDUSTRIAL HYGIENE

CONTROL MEASURES

<u>CODE</u>		<u>MEANING</u>
1. POS		<u>POS</u> itive
2. N	-	<u>N</u> egative
3. LE	-	<u>L</u> ocal <u>E</u> xhaust
4. ENC	-	<u>ENC</u> losure
5. W.M.	-	<u>W</u> et <u>M</u> ethod
6. G.M.	-	<u>G</u> as <u>M</u> ask
7. RESP	-	<u>RES</u> Pirator
8. ALR	-	<u>A</u> ir <u>L</u> ine <u>R</u> espirator
9. PC	-	<u>P</u> rotective <u>C</u> lothing
10. OTH	-	<u>OTH</u> er

GENERAL SUGGESTIONS

1. When sending in schedules to the Washington office, please place the schedules together by plant and code number.
2. List all State laws which may affect the results shown under the Industrial Health Data, i.e., (a) Laws or regulations in regard to sanitary facilities, such as the use of the common towel; (b) Compensation and insurance laws, etc.
3. List the exposure codes used with the meaning and any special interpretations.
4. List the industrial codes and various subdivisions with number of plants surveyed in each. When tabulations are completed, and there were only one or two plants in a subdivision, show where these plants were placed.
5. Check plants filed under each code number and pick up discrepancies. It will be very easy to change the tabulation sheets before they are summarized.
6. Check the editing, first for consistency, on Form 6, and then with Forms 4.
7. Check the tabulation of the control measures; in checking over the Forms 4, this has been found omitted in many cases.
8. Note whether there has been any specific interpretation of the manual, or change of interpretation from the manual; for example, if any type of respirator has been tabulated as a respirator, whether approved or not.
9. Prepare lists of trade name products with composition.
10. Prepare a discussion of editing--write up your interpretation as you go along to aid when writing up reports. For example, state:
 - a. When an arbitrary decision is made in regard to editing.
 - b. If a Pb exposure is always given where tetraethyl lead gasoline is used.
 - c. If more than a Pb exposure is given when type metal is used or melted.
 - d. If an SO₂ exposure is given with CO exposure in use of coal fires.

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